

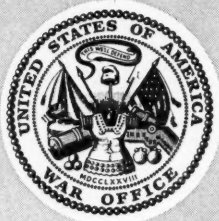
JANUARY 1958

ARMY
INFORMATION
DIGEST

THE ARMY IN 1962

PART I

THE OFFICIAL U. S. ARMY MAGAZINE



ARMY INFORMATION DIGEST

THE OFFICIAL MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the active Army, National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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TAKING present trends in research, development, organization, training and personnel policies as a starting point, some of the Army's top leaders project their views five years ahead to envisage the Army as it may evolve under the impact of atomics and revolutionary new weaponry. This special issue underscores the axiom that, for individuals and nations alike, the future belongs to those who think, plan and prepare for it.

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A SPECIAL ISSUE

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FOREWORD

THE United States Army is currently undergoing sweeping changes designed to improve its combat effectiveness on the atomic battlefield while retaining a substantial capability to fight a so-called conventional war. When these changes are completed, the resulting powerful fighting force, based on the "Pentomic" divisions, will bear little resemblance to the field armies of World War II and Korea.

IN THIS ISSUE we salute this new Army. We realize, of course, that it is difficult to describe the Army at any specific future date. Rapid technological advances and the growing dynamism of military science itself will continue to subject the "Pentomic" Army to changes possibly as revolutionary as those now taking place.

We have, therefore, somewhat arbitrarily selected 1962 as the year of the new Army. For several reasons we feel that by 1962 we should have a truly "new" Army. In the first place, our new organizations and their accompanying tactical concepts will have been completely tested and approved by that time. Further, many new and deadlier weapons, now being developed, will be in the hands of troops. New personnel management and training concepts will have been implemented, contributing to the supply of professional soldiers needed to make the new Army function efficiently. Army mobility will have been vastly improved.

In essence, the year '62 is far enough in the future to give us reasonable assurance that most

of our presently planned changes within the Army will have been accomplished.

In addition, 1962 is just far enough in the future to be beyond the scope of most of our current planning. Although the Army's plans must run beyond that year in many areas, such things as budgetary requirements, manning levels, and force structure realistically require planning to be limited to the years immediately ahead. Consequently, the use of the year 1962 as the year of the new Army has permitted our authors to predict the composition, missions, and requirements of the Army without compromising or being restricted by approved plans and actions.

WHAT will the Army of 1962 be like? How will it shoot, move, and communicate? What will be the training requirements for the personnel who man the weapons and equipment? On the following pages these questions and many others concerning the new Army will be discussed by experts in the fields concerned. Our readers are welcome to formulate their own opinions as well, since the purpose of this issue is to predict, not direct, the Army of the future.

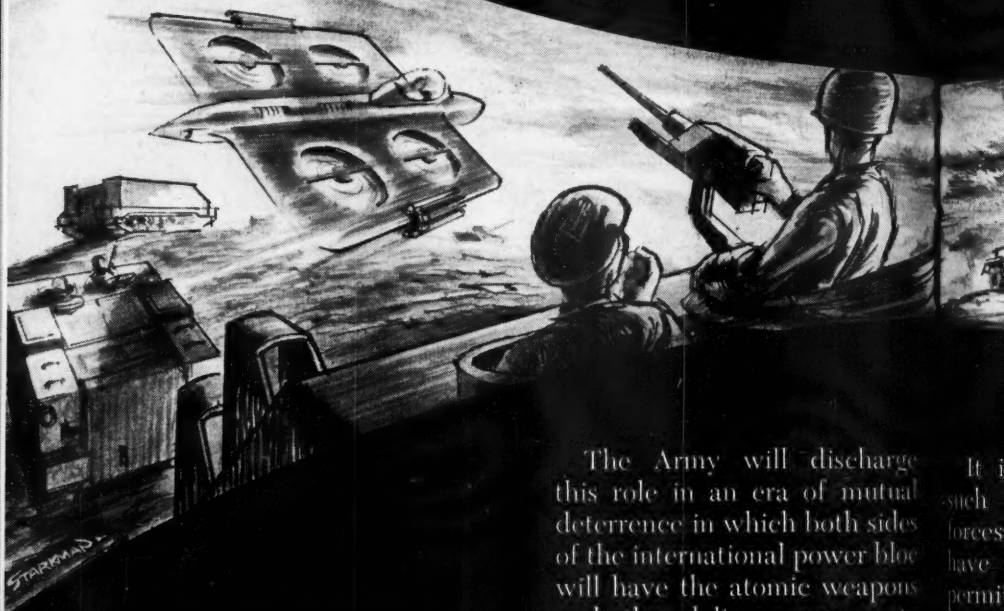
However, one thing is certain. The new Army will have unprecedented firepower, mobility, and flexibility. It will be capable of inflicting terrible casualties on enemy forces which oppose it on the ground or attack it from the air. It will truly be a vital factor in our national military posture and a worthy successor to the great American armies of the past.

The Editor

1962 The Challenge

THE ARMY'S ROLE IN

GENERAL M. L. D.
Chief of Staff of the Army



IN ITS simplest terms, the role of the Army in the coming years will be to provide a maximum contribution to the deterrence of war. This contribution will be made not as an isolated service, but as a part of the tri-service team of the Army, Navy, and Air Force.

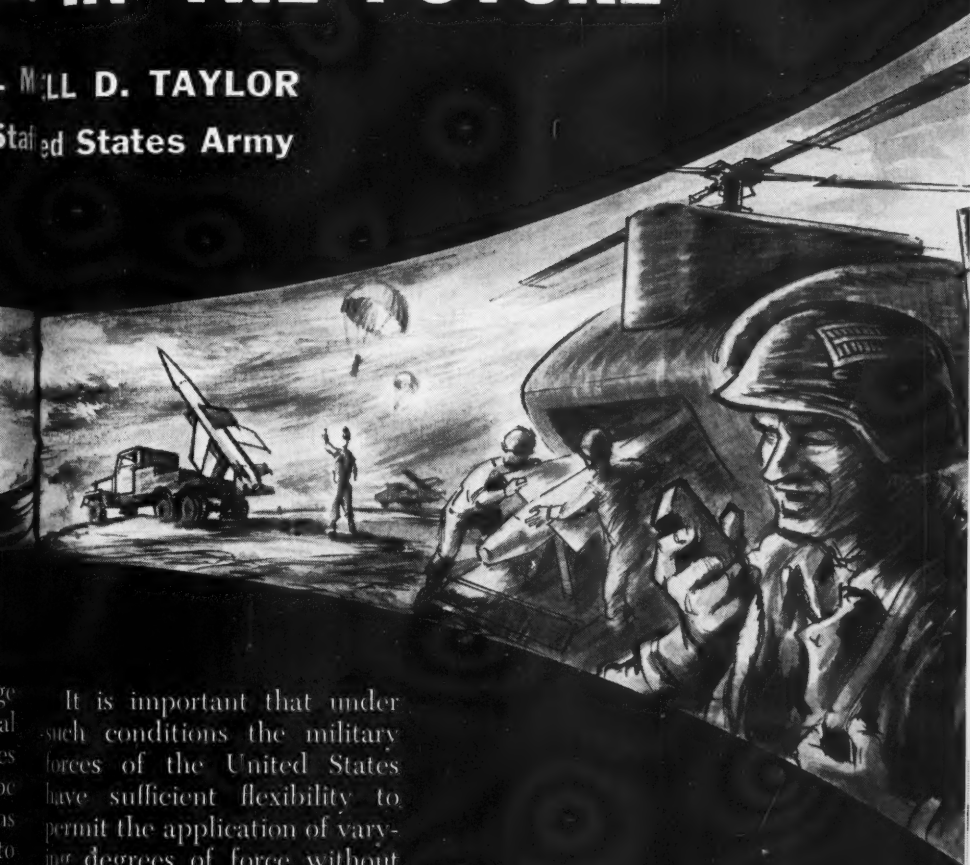
The Army will discharge this role in an era of mutual deterrence in which both sides of the international power bloc will have the atomic weapons and the delivery means to cripple one another in a general atomic war. Hence, it is to be anticipated that the primary effort of all governments—certainly of our own—will be to avoid that international catastrophe without abandoning our national objectives.

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It is important that under such conditions the military forces of the United States have sufficient flexibility to permit the application of varying degrees of force without sole dependence on weapons, the use of which is tantamount to general atomic war. To obtain this flexibility the Army must prepare itself to fight with atomic weapons, without atomic weapons, or with atomic weapons employed under certain ground rules.

It must have the means to suppress local conflicts quickly, since their continuation may lead to the great atomic war which it is our purpose to avoid.

This philosophy of the deterrence of war as the objective of the Armed Forces is so

fundamental to a discussion such as the present one as to deserve some amplification. Its point of departure is a positive requirement for the existence of civilization to deter general atomic war.

However, it is unsafe to assume that strong nations inclined to aggression will abandon the use of force to obtain their goals. It would appear more likely that they will operate by means of subversion and infiltration, limiting their military ventures to those which are not likely to lead to general war.

Thus, while there is the requirement on the part of the United States to maintain strong forces which present visible evidence of our ability to retaliate in the case of general atomic war, it is also essential to have those capable of deterring or winning in any situation short of a general war. Unfortunately for the simplicity of defense planning, the forces required for general war and for limited war are not identical.

SO important will it be to prevent breaches of the world peace



GENERAL MAXWELL D. TAYLOR is Chief of Staff, United States Army.

that the requirements for deterrent forces appropriate to this purpose should be adequately met before we are justified in making any large outlay to meet the consequences of the failure of deterrence—that is, to fight a general atomic war.

If we must assume that we cannot deter this general atomic war, we will be led into astronomical expenditures to meet the full needs of distant early warning, civil defense, the dispersion of industry, continental air defense, and similar activities. Efforts to meet such needs as these will tend to obscure the requirements of deterrence which in all logic should always come first. Hence, our efforts to hedge against the failure of deterrence must be made on a carefully selected basis. The top priority must be given to those categories of military forces which will contribute to the prevention of general war, and these include those necessary to deter or win quickly conflicts short of general war.

WITH the foregoing philosophy in mind, the Army of the future will be organized to meet, in order of priority, three possible military situations, namely, cold war, limited war, and general atomic war. To insure its readiness to meet these three conditions, the Army will be composed of five major categories of forces:

- Overseas Deployments
- Strategic Army Forces

- Reserve Strategic Army Forces
- Continental Air Defense
- Mobilization Forces

Overseas Deployments: These forces will continue to be a necessary contribution to the cold war effort of the Free World and as a deterrent to limited and general war. Army forces deployed overseas must be sufficiently strong to convince our allies of our will and ability to contribute substantially to their defense and to convince any aggressor that a forward movement in important strategic areas will be blocked on the ground long enough to permit our heavy atomic weapons to destroy hostile forces short of the objective of aggression. These forces in conjunction with those of our allies cannot be merely a trip wire to sound the alarm of attack; they must have real defensive strength in being. The U. S. Army forces in these deployments must be units of the active Army maintained constantly at a high level of combat-readiness.

Strategic Army Forces: Backing up our overseas deployments and essential to our defense posture in cold, limited, or general war are those Army divisions and supporting units located in strategic reserve in the United States. In cold war these forces will show both ally and potential aggressor that we have ready reserve strength, prepared for limited or general war. As limited war forces, these strategic striking units would be the first elements to be deployed to counter the aggression, and to prevent its spread into general war. They have a concurrent capability for a general war, in which case they would reinforce our overseas

units and discharge our obligations to them and to our allies.

Reserve Strategic Army Forces: This category of Army strength will be made up of selected reserve divisions and supporting units of the National Guard and U. S. Army Reserve which will be earmarked, trained, and ready for deployment in the period immediately following M-Day. We must have these forces to replace rapidly the active Army forces moved abroad at the outset of hostilities, to provide the additional divisions—beyond those of the active Army—necessary to fulfill our NATO commitments, and to increase our readiness for possible general war. The Reserve Strategic Army Forces have initial wartime missions so important as to justify giving them special assistance in raising their level of combat readiness.

Continental Air Defense: The Army's future contribution to the air defense of the Nation will consist of increasing numbers of active and reserve battalions manning Nike, Hawk, and perhaps Talos missiles. The Army is keenly aware of the need to provide the Nation with an acceptable level of air defense. However, the requirements for this essentially defensive element in our military structure must be balanced against the needs of the mobile, offensive forces to which the Army should always give a high priority.

Mobilization Forces: These are the additional reserve component forces which will be placed in training as soon after M-Day as the situation and facilities will permit. The number of units involved will depend to a considerable extent upon the situation existing at the

time. These forces will comprise units of the National Guard and the U. S. Army Reserve, the members of which have been on a paid drill status. The Mobilization Forces represent the requirements to prolong our military effectiveness beyond the first six months of war or emergency. The magnitude of these requirements is difficult to establish in advance, but the need for a capability to generate additional strength rapidly must be recognized in our military preparations for the future.

FUTURE STRUCTURE FOR DETERRENCE

THE foregoing paragraphs have indicated the categories of Army forces which will be required in the next few years. The size of these forces will depend upon a variety of factors. For example, our overseas deployments are where they are because of commitments which we have undertaken with our allies. Before they can be withdrawn, it will be necessary for the political leadership of our country to modify present understandings. Apart from their international significance, from a purely national point of view their presence abroad provides the United States with valuable outposts which give depth to our defensive dispositions. To give up these advance positions would contract significantly the range of our strategic capabilities.

The Strategic Army Forces are the hard core of the striking power of the Army in being. As the importance of coping with limited war tends to increase, so increases the requirement for strong, ready Army Forces held in reserve in the

continental United States. A measure for the size of these forces is the ability of the Air Force and the Navy to transport Army forces rapidly overseas. The present strength, eight ready Army divisions, and supporting forces, appears to be about the right allocation of means for the future to this important category of strength.

The size of the Reserve Strategic Army Forces will be related to the strength of the preceding category, the Strategic Army Forces. We shall need the ability to generate reserve strength as rapidly as we deploy strength in being to overseas locations. Fortunately, the success of our reserve force program gives us assurance of being able soon to have reserve units completely filled with trained men. Thus, the time requirement for mobilizing and preparing such units for combat will be significantly reduced. Consequently, with better trained and more carefully integrated reserve elements in our over-all defense structure, the Army will have an increased capability for generating strength rapidly to meet any emergency.

The size of the Army Air Defense Command should grow just as rapidly as is possible without destroying the over-all balance in the use of the Army's assets. Certainly, it is most important from the point of view of deterrence to assure the protection of our air retaliatory force as well as the principal centers of our civilian population.

We may anticipate a progressive increase in the number of Army surface-to-air missile units as the emphasis in continental air defense

shifts from the manned interceptor to the surface-to-air missile. However, it will be a mistake to attempt to erect a Chinese wall of static air defense around the United States at the expense of our offensive means of reaction. This is an area in which it will be most important, from a national point of view, to establish early a common sense yardstick of sufficiency for our objectives.

SO MUCH for the trends in size of future Army forces. Now a few comments as to their quality.

The field forces of the Army, particularly the divisions, are presently undergoing a drastic reorganization along Pentomic lines. In the years to come it may be anticipated that these new organizations will be refined as continuing experimentation develops and improves our tactics and techniques. Hand-in-hand with this process of refinement will go the creation and modification of new logistical processes. All our effort to improve our signal communications will give greater flexibility to commanders and allow a ready adaptation of Army units to the requirements of the atomic battlefield.

Mobility on the road, across country, and in the air above the combat zone, will continue to progress by virtue of the present emphasis being laid upon mobility in the research and development programs of the Army. Firepower has already made great strides as it assumes the form of the missile-borne atomic warhead. Additional progress is anticipated in the future, particularly in the improvement of our Nike surface-to-air

missile family, the introduction of Hawk and the development of longer range tactical surface-to-surface missiles.

BOTH the Army's quality and size in the future will be vitally affected by budgetary considerations. It appears likely that the Army will have to live within dollar budgets about the same as those of the present time. This requirement will impose a severe restriction upon the development of our forces.

There are numerous factors which will contribute to this difficulty. In the first place, it is to be anticipated that prices will continue to rise so that the effective purchasing power of our dollar will decrease. We are finding that the new weapons essential to the modernization of our forces are more expensive than had been anticipated. Thus, the bills for military hardware tend each year to absorb a greater proportion of our budget.

As our weapons become better they become more complicated, and as they become more complicated they require higher levels of training among our personnel. Once having trained our leaders and specialists, it becomes very important to retain them in the service. Unfortunately, their skills find a ready adaptation to the needs in civilian industry so that presently the Army is losing many of its skilled people after training them at great expense. It is to be anticipated that in the coming years it will be necessary to pay Army personnel at higher scales if we are to retain the competence which is indispensable in this modern force.



Finally, our fiscal problems will be aggravated by the fact that some of our programs are expanding and should not be leveled off. Two examples of such are the surface-to-air missile program and the reserve program. The first of these should be accelerated in order to reach a minimum satisfactory level of air defense in the United States. Army technology has been successful in providing the kind of missiles required. It is important that we now have sufficient funds to form the units and to place on site the operational

missiles necessary for a minimum level of satisfactory defense.

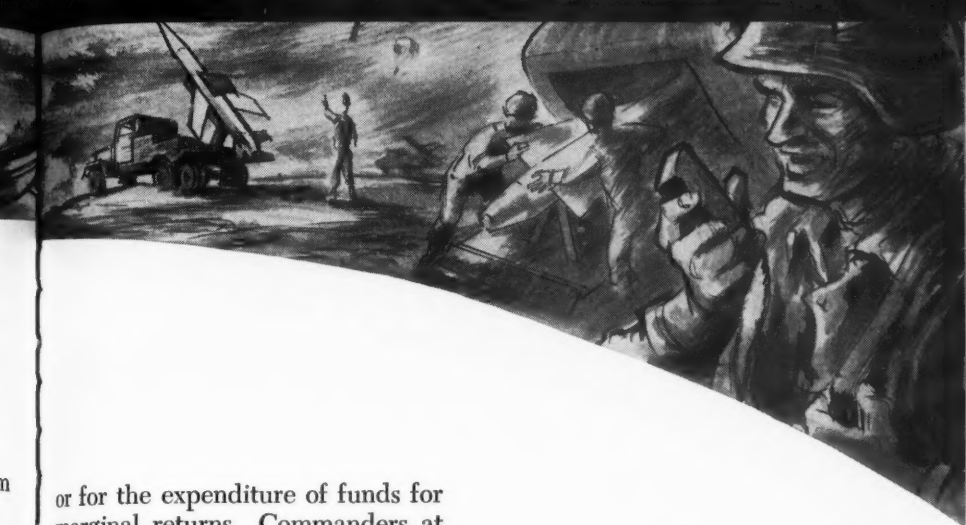
Likewise, the successful reserve forces program is creating additional dollar costs which it is most desirable to meet. If we are to utilize these reserve forces with their increased levels of readiness, the Army will be obliged to spend more money on armories, reserve training, and related activities. If we fail to make adequate provision for these reserve activities, we will sacrifice in part the new effectiveness which is within our reach.

In anticipation of these budgetary stresses it is most important that all members of the Army view most seriously their part in the effective utilization of Army assets. With these pressing requirements to support vital Army activities there is no room for inefficiency,

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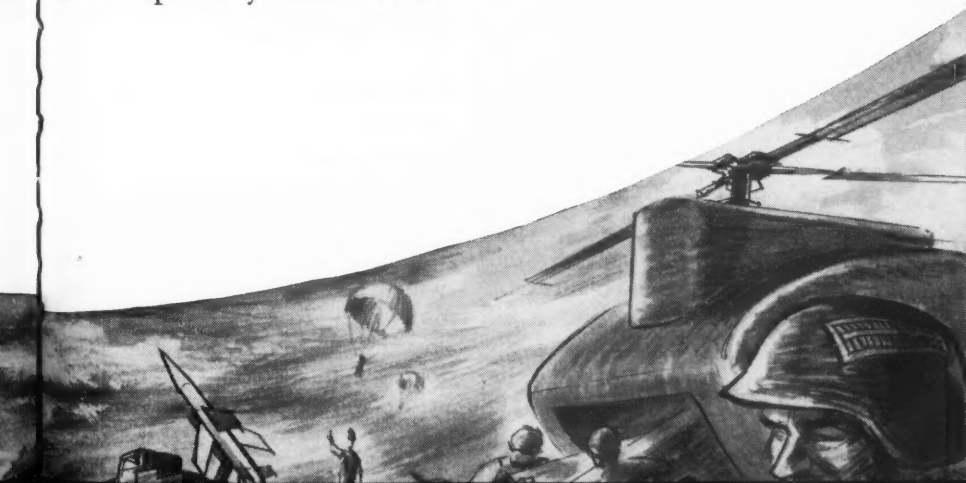
or for the expenditure of funds for marginal returns. Commanders at all echelons must be keenly aware of the requirement to reappraise Army activities to be sure that we are placing first things first and expending our resources on activities and on things with an identifiable relation to combat essentiality.

IN CLOSING this survey of the future Army, I would stress that it must progress in four vital areas. It must continue to develop better firepower, greater mobility, more reliable and more rapid communications, and better people. Success in all four areas is essential, but nowhere as important as in the area of people.

The Army will never be any better than the individuals who make it up. Every member of the

Army has a part to play in this field of self-improvement. He must make himself a better member of the Army community and at the same time insist upon the maintenance of higher standards by his subordinates. We cannot afford to maintain in the Army marginal, or substandard individuals. They should not be admitted at the point of intake but if they succeed in entering our ranks, they should be quickly identified and eliminated.

Only an Army which is filled with first-class people can in the long run be itself first-class.



1962 The Challenge

THE NATURE OF THE THREAT

MAJOR GENERAL R. A. SCHOW

Assistant Chief of Staff, Intelligence

Department of the Army

THE ARMY'S future plans and concepts are in great measure determined by the threat of Communist aggression which faces the United States and its allies. A full appreciation of the nature of this threat must include not only the armed forces of our potential

enemies but also the strategic concepts of the Sino-Soviet Bloc and the ideological atmosphere in which these concepts operate and on which, to a degree, they are based. To put these factors in logical sequence, one should begin with the Communist ideology,

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which explains much of the aggressive, expansionistic policies of the Sino-Soviet Bloc.

IDEOLOGY

THIS ideology is not a new one. It has been with us since the middle of the last century when Marx and Engels jointly produced the basic statement of socialist doctrine, *The Communist Manifesto*. This relatively brief document contains the core of the ideas which these men later amplified in much longer works.

In essence, Marxism may be divided into four interrelated branches: a general philosophy of all phenomena; a critique of capitalism; a theory of human history; and a vague forecast of the future development of human society into its ultimate perfection. At the risk of some oversimplification, this doctrine can be summed up by saying that it advocates the abolition of private ownership of the means of production, on the theory that there would then be no exploitation of workers by employers.

The practical example of such a system as provided by the Soviet Union shows that the abolition of the institution of private ownership results, in effect, in sole ownership of the economic resources of a state by the group which controls the government of that state. While this concentration of economic authority enhances the power of the government, it deprives the individual of a basic right, that of accumulating some degree of wealth and security by diligence and free enterprise. We could add that the centralization of all economic power in the hands of a relatively small group of political

leaders enables those leaders to wield this dictatorial power as they will to the detriment of other nations—and therein lies one of the main points of our story.

THE theories of Marx and Engels were translated into action in Russia by Lenin. This man contributed to the doctrine the theory that the inevitable changes in world socio-economic structures foreseen by Marx and Engels should be hastened by a political party of dedicated revolutionaries willing to accept a rigid party discipline. He was the sparkplug behind the splitting away of the Bolshevik faction from the Russian Social-Democratic Party. His theories and policies have been included in what is now called the doctrine of Marxism-Leninism.

It is this militant fanaticism of Lenin, coupled with the material power of the Soviet state, which makes the Communist ideology of today the very real threat to the free world that it is. Party members, in the spirit of what is euphemistically called "democratic centralism," subjugate all else to the good of the system, overlooking abuses and mistakes in the blind conviction that they are building a better world. The leaders of the Sino-Soviet Bloc find justification for their ruthlessly aggressive policies in the Marxist belief that the triumph of world Communism is inevitable and in the Leninist teaching that this triumph must be accomplished by the revolutionary activities of a militant Communist Party.

But the Soviet Union by no means limits itself to propagating Communism by political subver-

sion alone. The recent brutal suppression of the Hungarian revolution has again demonstrated that the Soviets are willing to go to the extreme of military force when persuasion and coercion fail. Nor are they so inflexible that they seek to jump in one great leap to the immediate destruction of capitalism. Instead, the whole history of Soviet Communism indicates an extraordinary flexibility in the short-range tactics they will employ to achieve the long-range strategic goals of their ideology.

STRATEGIC CONCEPTS

SOVIET strategic concepts can be described in terms of time, geographic area, and military means. The very flexibility of their short-range tactics as well as the indefinite time frame basic to their ideology leads us to believe that, in terms of time, Soviet strategy is geared to a long period. The blockade of Berlin, the war in Korea, the era of "peace and light" after the Geneva conference and the subsequent abandonment of all of these and many other apparently short-range moves in the international chess game indicate strategic concepts which are not geared to a rigid timetable.



MAJOR GENERAL R. A. SCHOW is Assistant Chief of Staff, Intelligence, Department of the Army.

What does this indicate concerning the purely military aspects of Soviet strategy? We believe that it means a military strategy of flexible opportunism. Rather than the calculated all-out blow at a preselected time, it seems likely that the Sino-Soviet Bloc will seek to expand by political subversion whenever and wherever possible as a preferred means.

When the time seems ripe for more open aggression, as it possibly did at the time of Korea and the Viet Minh campaign against the French in Indochina, they will not hesitate to employ loyal satellite forces against the free world. In time, they may feel free to commit Soviet forces thinly disguised as "volunteers" as the Soviet leaders threatened to do in the Middle East or even, eventually, undisguised Sino-Soviet Bloc forces in naked, deliberate seizure of vital strategic areas.

To say that the Communist leaders are flexible and prefer to seek gradual expansion by such measured means as the circumstances of the moment will permit is not to say that we can neglect the possibility of a deliberate all-out blow at some point in time. This possibility has been with us since the Soviets added the hydrogen bomb to their arsenal. Our national security policy must insure that the Soviets are deterred from any such suicidal move, as in fact it is wisely designed to do.

At the same time it should be recognized that other forms of Communist aggression are more in keeping with their basic philosophy, and pose an equally dangerous threat over the long term. These forms will vary with time and circumstances as well as with the world area toward which they are directed.

What geographic areas are of primary concern to the Communists? It seems apparent that Communism seeks to expand, and is best able to expand, gradually outward from its nucleus—much as a cancerous growth spreads in the human body. In this way the strong core can nourish the offshoots and the homeland can add military weight to its followers, just as Communist China and the Soviet Union lent backbone to the North Korean drive to the south.

Furthermore, the balance of world power between the United States and the USSR lies on the periphery of the Eurasian continent, geographically vulnerable to just such Communist expansion. The industry and skilled population resources of Europe, the oil of the Middle East, and the raw materials of Africa and Southeast Asia—all are accessible via land bridges from the USSR. Moreover, these areas include the bulk of the world's population to which the Soviets seek to spread the philosophy of Marxism-Leninism.

It would seem most logical for these objective areas to be uppermost in the minds of Soviet strategic planners, not only because they offer resources needed by the Communist heartland, but because the denial of these resources to the United States would cause an

American withdrawal into a hemispheric isolationism.

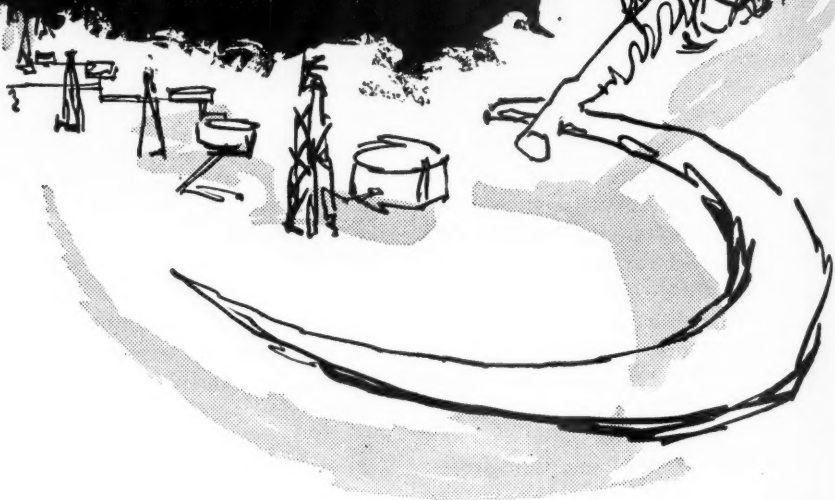
If the Soviets were able to acquire Western Europe, the USSR would then control, for example, about 55 percent of the world's production of finished steel, as opposed to the 24 percent which the Sino-Soviet Bloc now produces. They would also have available about 45 percent of the world's electric power production as opposed to their present 19 percent.

If, instead of attempting direct acquisition of Western Europe, the Soviets were to secure the Middle East, with its 75 percent of the world's proven oil reserves, it is possible that Western Europe would become a victim of Soviet economic pressures. Consequently, we believe that Soviet military-strategic concepts center around the Eurasian-African continents and that it is into these areas that the Sino-Soviet Bloc will seek to expand.

STRATEGIC concepts should also be considered in terms of means. In military strategy, these means are armed forces. The structure and strengths of armed forces are inevitably governed by the strategic concepts of the state which supports them. Conversely, these forces frequently provide physical evidence of the concepts from which they spring. For example, Great Britain's strategic concept has for years been one of maintaining the unity of the industrial home islands with raw-materials producing areas and markets overseas. Consequently, naval strength has predominated in her armed forces structure. The

THE balance of world power between the United States and the USSR lies on the periphery of the Eurasian continent—The industry and skilled population resources of Europe, the oil of the Middle East, and the raw materials of Africa and Southeast Asia—all are accessible by land from the USSR . . . It would seem logical for these areas to be uppermost in the minds of Soviet strategic planners, not only because they offer resources needed by the Communist heartland, but because the denial of these resources to the United States would cause an American withdrawal into hemispheric isolation.

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fate of Russia, on the other hand, has long been tied to the land.

Russia, and now the Soviet Union, lies in the center of Eurasia. Most of her major wars have been fought with the neighboring states of Germany, Turkey, and the European empire of Napoleon. The Soviet peoples have vivid recollections of the German invasion of World War II and are constantly reminded of it by their leaders' propaganda. Consequently they have long maintained, and continue to maintain, large ground forces capable of either offensive or defensive action on the predominantly land frontiers which separate the USSR from its neighbors.

Possibly an equally valid reason,

from the Soviet leaders' point of view, for maintaining large and effective ground forces is the necessity of maintaining the Communist regime in power. This was apparent during the Hungarian revolution when these forces brutally but effectively stamped out the spark of freedom before it could break out in other parts of the satellite empire. Poland is held in check from further freedom today by the threat of massive Soviet forces on both her eastern and western borders. The East Germans are ruled, in effect, by the 22 Soviet divisions stationed within their borders.

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the territory which he physically occupies is the ultimate instrument of Communist power, perhaps even within the Soviet Union itself.

However, Soviet military concepts (and these are synonymous with Sino-Soviet Bloc concepts) do not ignore nuclear weapons or air and naval power. While the Russians rejected strategic bombing as an instrument of military power during World War II, they have since made clear that they are rapidly developing a long-range nuclear delivery capability. We know that they have in production aircraft similar to our own latest types.

At present there are more than 20,000 planes in the Air Forces of the Soviet Army, most of them modern jet fighters. Soviet leaders have shown a keen interest in guided missiles and are rapidly developing this most advanced weapons delivery system. The Soviets already operate the largest submarine fleet in the world—some 500 undersea craft. In addition, the Soviet Navy has 25 modern cruisers and 130 modern destroyers.

Soviet military doctrine is based on well-coordinated employment of all forces under a single commander. Should the Soviets decide on war in some form as an instrument of policy, it seems apparent that the means employed would be well-integrated forces of all arms and services employed with due consideration as to time and place.

SINO-SOVIET BLOC CAPABILITIES

WHILE the Communist ideology and concepts are more or less common to all members of the Bloc their military capabilities should be treated separately, with each of the

component states of the Bloc considered in turn. Experience has shown, particularly in Korea, that we may be faced with one or several members acting in concert. The USSR can always elect either a role of limited participation or remain as a threat in the background to influence the scope and intensity of conflict.

SOVIET UNION

SOVIET ground forces number about 2½ million men, organized into 100 rifle divisions, 75 armored-type divisions, and supporting units. These divisions are not all at full strength; indeed some of them within the USSR are probably cadre type units which can be brought to full strength rapidly upon mobilization. Of the total of 175 divisions, the majority are stationed in the Soviet Union, mostly in border regions. There are 22 divisions in East Germany, and much smaller numbers in Poland, Rumania and Hungary. These ground forces are supported by effective tactical aviation under the direct control of the ground commander.

Soviet ground forces have been almost completely re-equipped since World War II. They have a complete new family of small arms, new artillery, new trucks, new medium tanks, amphibious vehicles, and helicopters. (See "A Look at Soviet Weapons," August 1957 DIGEST.)

Some 28,000 new T-54 medium tanks have been produced for the Soviet Army ground forces, of which large numbers have been delivered to Soviet forces in East Germany.

In addition to these strong active

forces, the Soviet Union has an ample pool of well-trained manpower for mobilization. Their system of universal military training turns out about 700,000 fully trained reservists every year, all of whom remain on the reserve rolls until age 50 and are subject to immediate recall when needed. The Soviet mobilization system is believed to be very effective, capable of bringing all units to full strength rapidly and forming many new ones as well. Ample equipment is kept on hand and in depots for mobilization purposes.

EUROPEAN SATELLITES

THESE satellite forces are estimated to number about 1½ million men. In the main they are equipped with older Soviet materiel but many newer items of

equipment such as 57mm light antiaircraft guns and T-54 tanks are beginning to make their appearance. In these countries also universal military training is the rule.

As a result of the developments in Poland and Hungary, the loyalty of many of these forces to the Bloc is certainly open to question. However, we must remember that the leadership of these forces is now more than ever subject to the closest political scrutiny and we must presume the presence of loyal and influential cadres. Furthermore, national hatreds are often stronger than political beliefs and must be reckoned with. Even under the most unfavorable of circumstances, from the Soviet point of view, the USSR has the military force to maintain order in Eastern Europe without materially affect-



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COMMUNIST CHINA

THE Chinese Army of 150 divisions plus supporting units has been re-organized and modernized since 1952. This has included standardization of weapons with resulting simplification and increased efficiency in supply. More service and support units have been organized; the military school system has been vastly expanded.

Communist China certainly poses the most serious threat of all the Bloc states other than the USSR. In addition to the sheer weight of its forces, Communist China has territorial objectives of its own which must be reckoned with quite apart from loyalties to Moscow. Mao Tse Tung has been outspoken in his threats to take over Taiwan and liquidate the Chinese Nationalists. His support of the North Koreans helps to keep that area a tinderbox. Communist China furnished material support to Ho Chi Minh in Indochina and would probably support renewed aggression into Southeast Asia should the circumstances seem opportune.

RESEARCH AND DEVELOPMENT

MODERN WAR, just like modern civilization, is becoming ever more complex. The scientific and technical progress of the Sino-Soviet Bloc thus becomes a vital factor in assessing the Communist threat, and must be considered along with strategy and military forces. Since the USSR undoubtedly leads the Sino-Soviet Bloc in research and development, we can limit ourselves in this consideration to the Soviet Union.

One of the most significant characteristics of Soviet education is the emphasis placed on mathematics and other scientific subjects in the first ten years of Soviet schooling. The curriculum prescribed for all primary and secondary school students includes algebra, geometry and trigonometry as well as five years of physics and four of chemistry. It should be noted that in many of our states the minimum requirement for graduation from high school includes only one year of mathematics and one year of some other science.

Soviet scientific-technical manpower is growing both in quantity and quality. One reason for this growth is that a scientist's salary is several times that of an ordinary worker. In addition he receives incentive benefits such as automobiles and other luxuries completely inaccessible to the average worker. In addition, the Soviets allocate large sums as prizes to encourage individuals to excel in science and technology, and to stimulate original ideas which will materially assist the Soviets in achieving their goal.

The Soviet Union has inherited a scientific history which is rich with achievements in the basic sciences. Russian scientists have made significant contributions in such important fields as mathematics, chemistry, electromagnetics, and psychology. Stalin, in 1931, sounded the keynote of all scientific and technical endeavor—"technology decides all." Science is now one of the main bulwarks of Soviet power.

Since the early 1930's an impressive scientific-technological ma-



WE BELIEVE that the Sino-Soviet bloc, following a policy of military opportunism, has sufficiently flexible military capabilities to intervene in situations of its choosing in a variety of ways, ranging through the spectrum of war from armed revolution to the extreme of all-out nuclear warfare. It is this totality of possibilities that the United States Army must at all times be prepared to meet and repel.

chine has emerged. Despite the crippling effects of World War II, and the unevenness which has resulted from rapidity of growth, the USSR has developed from a technologically inferior nation to a nation whose educational research and development structures are geared for two basic activities: first, massive support of top priority research and development programs; and second, long-range planning in science and engineering with the goal of ultimate technological supremacy.

Although closely shielded from public view, the Soviet achievements in high priority research and development fields are quite impressive. Of equal significance is the evident Soviet determination to initiate early mass production of

the products of their research and development programs.

THE Soviet Union has made important progress in such fields as nuclear energy, electronics, guided missiles, and aircraft. The Soviets have an ambitious atomic weapons testing program evidenced by public announcements of Soviet test explosions. Although starting considerably behind the West in electronics know-how, the Soviets have recently begun to display originality in electronics design and technique. Soviet aircraft displayed on numerous occasions, and the Soviet announcements concerning their guided missile capabilities, emphasize their determination to push forward in these vital fields.

In the field of conventional

weapons the Soviets have a tradition of weapons that are distinguished by their simplicity, ruggedness, ease of maintenance and mass production.

Although the Soviets have neglected much of their economy to stress weaponry and heavy industry, the consequent limitations on consumer goods production are accepted by the Soviet people. Thus, we foresee that the Soviet Union will continue to push forward in selected critical research areas with grim determination for many years to come.

SPECTRUM OF WAR

WHAT conclusions can be drawn then, as to the ability of the Sino-Soviet Bloc to engage in various types and forms of warfare? First, we believe that the Soviet Union, alone among Soviet Bloc states, is continuing to improve its capability to fight the all-out nuclear battle which lies at one extreme of the modern spectrum of war. Their detonation of a multimegaton nuclear weapon in November 1955 ended the Western monopoly of the ability to devastate the heartland of an enemy in one quick blow. Second, the Soviet Bloc also has the capability of fighting wars of lesser magnitude, including limited wars of varying scope and intensity.

THESE lesser wars would pose a

threat to the United States equally dangerous, if not as immediately devastating, as the outbreak of unrestricted nuclear warfare. Such wars might occur in Asia if Communist China elected to implement its threats to seize Taiwan, if the North Koreans were induced to renew aggression against the Republic of Korea, or if North Vietnam, with or without Communist Chinese backing, made further moves toward the south.

Probably the most likely area at present for limited wars of this nature is the Middle East, where local antagonisms have produced an explosive situation ripe for exploitation by the Soviets. This manipulation is now being accomplished through diplomacy and material support but could extend to the employment of Sino-Soviet Bloc "volunteers."

In other areas of the world there is local friction resulting from a variety of causes which could conceivably result in armed conflict of less than all-out magnitude. These danger areas offer fertile fields for Communist exploitation.

We believe that the Sino-Soviet Bloc, following a policy of military opportunism, has sufficiently flexible military capabilities to intervene in such situations in a variety of ways, ranging through the spectrum of war from armed revolution to the extreme of all-out nuclear warfare.

1962 The Response



LOGISTICS IN THE ATOMIC ERA

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LIEUTENANT GENERAL CARTER B. MAGRUDER

Deputy Chief of Staff for Logistics

Department of the Army

THE scientific advances of this atomic age have given to our armies new explosives of tremendous power and the ability to deliver them with accuracy at ranges far beyond previous capabilities. The ascendancy of the offensive over the defensive, which was lost to the machine gun-barbed wire combination in World War I, is restored. Logistically, this means that the Army must be prepared to support its combat forces in movement more continuously and over greater distances than in World

War II. At the same time the difficulties of providing logistic support to our combat troops will be increased.

In future wars, any major installation is liable to be destroyed at any time by a missile carrying an atomic warhead, any bottleneck in our lines of communication is liable to be rendered impassable at any time, and changes that atomics bring about in the tactics of our combat troops promise to put an end to the security of our lines of communication. This is

IN ANY future general war, atomic attack on industrial centers of the United States can be expected. We could inflict tremendous losses on attacking enemy aircraft and long-range missiles, but the damage done to industrial plants and losses inflicted on plant personnel may be considerable. Under these conditions, we could not depend on industry as heavily as in the past, for adequate production of munitions immediately following atomic attack.

BEFORE an atomic war starts we must have a balanced stockpile of combat-essential military equipment, so that the Active Army and some of the reserve components in action can be supplied even in the absence of early deliveries from industry. Dispersal of these supplies in depots too small to be in themselves worthwhile targets for atomic attack is essential. . . .

OUR great ports, such as New York, offer worthwhile atomic targets and could be severely damaged. However, we have many secondary ports; too many to be all knocked out. The port problem will be handled by Transportation Terminal Commands which would route supplies to available undamaged ports.

FOLLOWING an atomic exchange in a general atomic war, we are not going to be able to deliver to our troops the supplies in tonnages to which they were accustomed in World War II. Combat troops will fight at a level of austerity they have heretofore experienced only immediately after landing on a hostile shore.

quite different from our experience in recent wars when the destruction of our industrial installations, depots, ports, railway bridges and other structures, although possible with bombs, seldom occurred because the United States forces usually enjoyed air superiority.

Another difference in any future war will be the intrusion of enemy forces into our rear areas. In World Wars I and II and in Korea, our rear areas were almost as safe and undisturbed as the continental United States itself. It is true that in both World Wars our first great battle was a battle of the Atlantic and, until the Navy had virtually eliminated German submarines, our sea lanes were not secure, but never since the days when Stuart's Cavalry roamed the rear areas of the Army of the Potomac have the land lines of communication of an American army been placed in jeopardy. In any future atomic war the dispersion that we must accomplish habitually to avoid offering profitable targets to enemy atomics will prevent the formation of the strong continuous line that has protected our Communications Zone in the past.

Let us follow our lines of communication from their start in the

United States to their end in the front lines of our armies in an overseas theater, and in the process review the logistic problems we face and the measures we are taking to solve them in the period between now and 1962.

Since we must always be prepared for the worst, I propose to review first the logistic problems and solutions for a general atomic war and then later discuss those logistic problems we may meet in a local war which may differ from those of a general war.

LOGISTICS IN GENERAL WAR

IN ANY future general war, atomic attack on the industrial centers of the United States could be expected and, although we could inflict tremendous losses on attacking enemy aircraft and long-range missiles, a considerable amount of destruction of our industrial plant may result. Likewise, there may be a considerable loss of trained industrial personnel. Under these circumstances, we could not depend as completely on industry for the production of munitions as we have in the past years. This requires that, before an atomic war starts, we have a balanced stockpile of all types of military equipment in reserve, so that we can support the Active Army and some of the reserve components in action without early deliveries from industry.



LIEUTENANT GENERAL CARTER B. MAGRUDER is Deputy Chief of Staff for Logistics, Department of the Army.

Our reserves of equipment and supplies must be protected against loss. Depots are not in themselves worthwhile targets for atomic attack unless we make them too large or concentrate in a very few depots a great portion of our supplies of some critical type. Dispersion of our reserve supplies within the United States is therefore essential for protection.

Desirably, depots should be so constructed that they give protection against fallout. Each critical item of supply must be stocked in at least three or four different locations well away from major target areas liable to be attacked.

Our transportation system within the United States may be hit, but even transportation bottlenecks within the United States do not offer a remunerative target to the enemy. Experience in Europe in World War II indicated that breaks in the transportation lines could be repaired or by-passed so readily that a line of communications could be interrupted only if the line was cut time and again by repeated attacks. Accordingly, I do not believe the military services need make any special provision to maintain our transportation lines within continental United States against such attacks. The well qualified repair crews that now exist outside the military services should prove themselves able to cope with disaster.

OUR ports, particularly our great ports such as New York, offer worthwhile atomic targets and could be severely damaged. However, we have many secondary ports, too many to be all knocked out. Our solution to the port prob-

lem is the establishment of Transportation Terminal Commands. These commands will decide what secondary ports will be used should major ports be damaged; they will call upon general depot complex commanders to ship supplies to selected undamaged secondary ports over selected undamaged routes, so that cargo destined for overseas shipment can move from our depots to ports in spite of damage within the United States.

The safety of our shipping is a difficult problem for the Navy. Losses of ships and cargos may be expected, particularly in the early phases of another war, but even so we do not expect our sea lines of communication to be cut for any protracted period.

The great mass of our supplies will still move overseas by water. In peace, only about one percent of the tonnage crossing the Atlantic is carried by transport aircraft. What is economical in peace is an indication, at least, of what is practicable in war. I look to see the proportion of air to water lift increased considerably in time of war, perhaps up to five percent.

In our use of air transport we will be selective. We will seek to have air transport allotted to the Army for critically important strategic troop movements, and for critical personnel and supplies.

WHILE the battle of the sea lanes is being fought, heavy cargo losses may be anticipated. It is therefore essential that before war starts we have on hand in overseas theaters a heavy reserve of combat essential supplies. Measures are being taken now to increase the level of our overseas reserves.



"We will rely on ... helicopters for movement of critical items in limited supply."

Continuing along our line of communications on the continent, we must expect continental ports to be damaged. Moreover, a large number of ships in any location offers a highly remunerative target. We must not permit such targets to be so formed.

Rather, we must disperse our shipping on arrival at continental destinations. We must have many locations where packets of four or five ships may be unloaded. Packets of ships which carry heavy lift cargo may well be unloaded at existing ports but with only one packet in the harbor at one time. Other packets will be unloaded over sheltered beaches with the use of lighters, landing craft, floating piers, overhead tramways, or any other available means.

During peacetime, we are preparing and training for these operations by performing them every few months in our overseas theaters. In these exercises the cargo is moved across the beaches to railroad trains and then to depots so that there is no accumulation of cargo that may offer the enemy a worthwhile target. The speed with which these ships are unloaded determines the capacity of any port or over-the-beach unloading location as well as the time

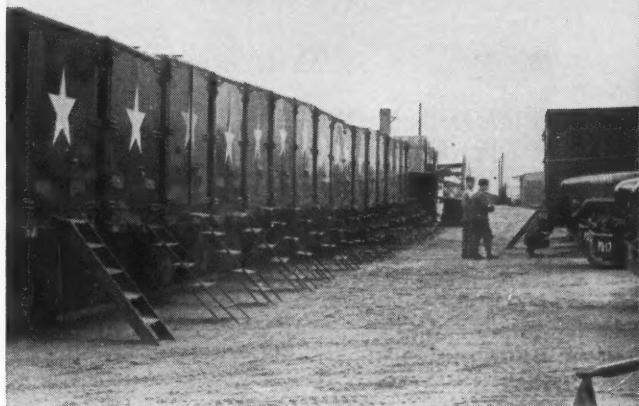
during which our ships are most vulnerable to attack.

In the interest of speed in unloading, we are striving increasingly to handle cargo with mechanical equipment. Small items are being strapped on pallets or packed in standard Conex shipping containers to make easily handled loads. Roll-on roll-off ships are under development and should be available by 1962 to expedite unloading. Coupled with improvements already made, they should decrease the time in port to about one fifth of the unloading time required in World War II.

Within the theater of operations a depot becomes a more remunerative target to the enemy than it is in the United States. It can be reached with weapons of less range and is therefore more liable to be attacked with atomics. This accents the importance of dispersal of stocks in an overseas theater by the establishment of general depots, each with a cross-section of all the supplies required by the combat troops. Before 1962 all overseas depots should be general depots.

THERE is an added requirement that ties in closely with the dispersion of stocks in general depots. Since we must be prepared

"To the maximum extent possible, light but complicated supplies will be carried in vans."



to suffer losses of some depots by atomic attack, it becomes increasingly important to be able to determine at any time what stockages remain ready for issue. This problem is being met by the installation of electronic machines that are capable of recording inventories and of giving instantly the location of whatever stocks of any item remain available. Duplicate machines facilitate the establishment of such inventories at several places so that the loss of one stock control point will not affect over-all operations.

Base section depots will be located far enough from the ports and beaches to secure protection by dispersion but close enough to avoid overburdening the transportation system with long hauls of cargo not needed urgently by the troops.

Forward of the base section, supplies will be located in two areas—in an Advance Section, and in Field Army depots. Both will carry essentially the same stockage. When an army advances, its depot units will move forward to establish new depots and will leave behind, in their old installations to be taken over by the Advance Section, such stocks as are not mobile.

While the Field Army depots are

moving, the Field Army depends upon direct supply from the Advance Section. When the Advance Section moves, the Field Army depends for supply on its own depots. To the maximum extent possible, light but complicated supplies (such as repair parts) stocked in the Field Army depots will be carried in vans so that their movement will be relatively easy. Ammunition and POL stocks are relatively immobile and will be left behind for the Advance Section to take over.

THE movement of supplies from the Base Section to the Advance Section must be over transportation lines whose bottlenecks may be knocked out again and again. Enemy guided missiles fired with map data as formerly employed with long-range artillery can keep these bottlenecks broken almost continuously.

This means that we must be prepared to repair such bottlenecks rapidly, to detour them if they cannot be repaired and to construct such detours rapidly. We must have cross-country vehicles that can detour the bottlenecks after a minimum of construction and heavy-lift helicopters such as the flying crane that will permit us

to bridge them. For critical cargo of relatively light weight we may use small cargo-type fixed-wing aircraft that are capable of landing in open fields, or at least on division airstrips. Air bases of the heavy construction now required make too inviting a target.

For the Field Army depots we have developed and are building small general depots, each of which will contain austere supply for an

of atomics has restored the ability of ground forces to move.

The tactics which demand dispersion of combat units may well make impracticable the establishment of any type of strong continuous line, penetration of which requires the major effort of a large force. Such a line was found necessary in both World Wars and in Korea. Without such a line, small enemy units can infiltrate far into



Need for trained cooks or heavy field equipment is eliminated by meals that require only addition of hot water, as demonstrated by a tank crew.

Army Corps. If one of these is destroyed, the Corps can draw from an adjacent Corps or from the Advance Section. It is essential that these depots be kept small else they become difficult to conceal and make inviting targets.

AS WE approach the front, the movement of supplies will become more and more difficult. At the same time the need for movement becomes greater since the power

our rear areas, blow up railroads, mine roads, destroy convoys, attack installations.

Our base sections will require a protected perimeter. Forward of the base section every unit must be prepared to fight in self-protection. With portable guided missiles or with antiaircraft automatic weapons, penetrating enemy units can bring down our low flying cargo planes and helicopters, so we must expect to take losses.

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Reliance will be placed on light cargo planes and helicopters for the movement of critical items and emergency supplies whenever required. But we must not assume that these valuable but expensive aircraft provide any basis for scattering combat units in isolated locations, with sole dependence being placed on aircraft for their routine supply.

Our overland supply convoys must be capable of cross-country movement and of fighting their way up to the units they are to supply. Combat troops in considerable numbers will be required to provide protection against large enemy units that have penetrated our rear areas; they must hunt down these units and destroy them. Armored personnel carriers and armored utility vehicles will be incorporated in our major units in great numbers by 1962 and will offer assurance that our supplies can be fought through to the combat echelons.

FOLLOWING an atomic exchange in a general atomic war, we are not going to be able to deliver to the troops supplies in the tonnages to which the United States Army was accustomed in World War II. Since World War II our mechanical and electronic equipment has increased. The new word "austerity" is coming into use and needs to be emphasized more and more.

In World War II we found that troops could fight for short periods when supplied with only ammunition, food and gasoline. Before 1962 I believe we will have cut our requirements for those three basic essentials as much as possible and

added a minimum of other necessities so that tonnage of supplies required by our troops will be down within the realm of possible delivery. Following are some areas of possible reduction or addition:

Ammunition. Ammunition has always been our heaviest tonnage. With the minutest fraction of the weight of conventional ammunition, we can now get the same explosive effect with atomics. We will progress in making our atomic explosives smaller so that they can be fired closer to our own troops without endangering them. Very small yield atomics will replace much of the heavy tonnage of conventional ammunition.

Food. The Army has always had emergency rations of very small bulk but they have not been adequate to subsist men for many days. To feed troops properly, it has been necessary to deliver refrigerated meat—and refrigeration itself is a considerable tonnage item. Progress with irradiation of food indicates that by 1962 we will be able to dispose of refrigeration in forward areas in a combat theater. We will be able to provide irradiated and dehydrated foods which need only water and heat to provide a diet which is not only nutritionally good but comparable to fresh foods in taste. As a result, troops will be better fed; and we can make combat soldiers out of the cooks and kitchen police.

POL. By 1962 essentially all of the Army's heavy engines should be compression-ignition engines. These will offer the economy of the Diesel engine, yet will have the ability to utilize gasoline and heavier fuels, including captured

enemy stocks. The installation of these engines, plus the general reduction that we must accomplish in tonnage of cargo to be moved, promise great reductions in the tonnage of POL that must be delivered into the forward areas.

Engineer Materials. Next in the list of heavy tonnages are engineer materials, with perhaps the heaviest requirement for items used in construction of airfields. Cow pastures and division air strips do not require much construction material. We must learn by 1962 to operate from such airfields.

Class II and IV Supplies. The replacement of worn-out or damaged end-items is a major tonnage requirement. We must expect that equipment which breaks down in movement and is left behind in an unprotected rear area may be destroyed by enemy patrols; moreover, working parties endeavoring to salvage such equipment may

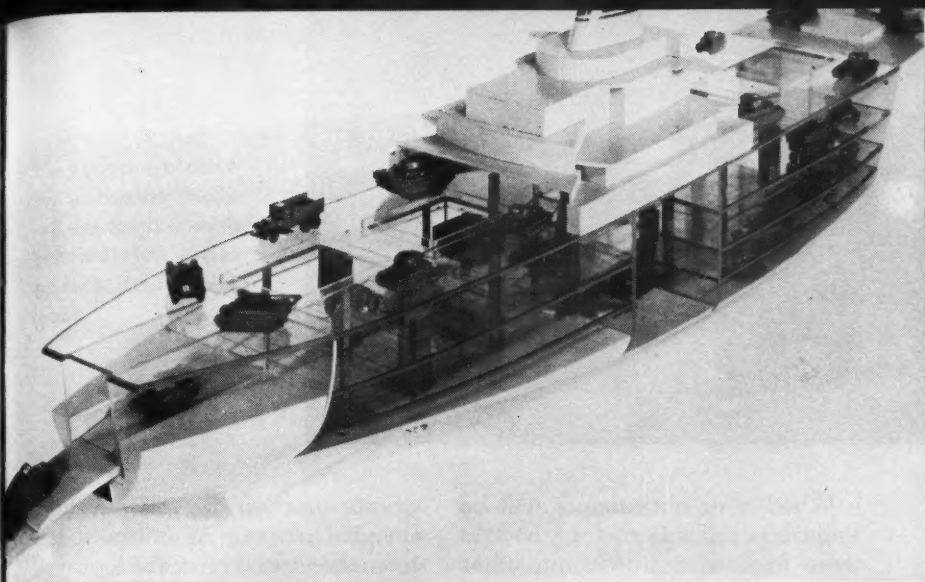
well be attacked. Transportation difficulties are going to make it uneconomical for us to evacuate heavy equipment to the rear.

The ease with which major manufacturing facilities can be destroyed would render doubtful the desirability of maintaining rebuild shops in an overseas theater. Rebuild of equipment is a peacetime operation. In future war it will probably be confined to the most critical equipment—for tanks, perhaps yes; for general purpose vehicles, no. This means it is important that our equipment not break down, or if it does, that it can be readily repaired by semi-skilled mechanics in a relatively short time. We are devoting efforts to increasing the reliability of our equipment.

In his studies for the Department of Defense on possible methods of retaining qualified technicians in military service, Mr. Ralph J.

"For critical cargo of relatively light weight we may use small cargo fixed-wing aircraft capable of landing in open fields."





Cutaway model shows principles of roll-on roll-off vessel construction designed to speed loading and unloading of tracked and wheeled vehicles.

Cordiner, President of General Electric, concluded that all possible steps should be taken to reduce the number of technicians that must be retained. He proposed that contracts be let with industry to make complicated equipment easier to operate and easier to maintain and thus reduce our requirements for technicians.

By 1962 it may reasonably be expected that we will have progressed far in increasing reliability and in simplifying maintenance so that less equipment breaks down and that which does break down can be rapidly repaired.

IN addition to improving reliability and increasing the simplicity of our equipment, we will have reduced and simplified our repair parts supply. We are attacking this problem by selective stockage in forward depots of only fast-moving, critically needed repair parts. Cannibalization by our Reclamation and Classification Units will provide any other parts that

may be required. This will permit a reduction of repair parts in forward echelons to about 20 percent of those formerly carried.

LOGISTICS IN LIMITED WAR

UP TO this point I have discussed only one aspect of logistics—the supply line for general war only—to make the discussion of the supply line complete and not because I consider general war a probability. Quite the contrary. With a general war being essentially suicidal for both sides, it is important to be *capable* of fighting such a war in order to have a deterrent effect, not with the expectation that if it occurs either side will really win.

Limited wars, on the other hand, are far more probable and promise to be less destructive. In such a war, it is highly probable that both sides will endeavor to confine active operations to local areas. It is rather difficult to estimate what limitations, other than territorial, may be accepted by both sides.



Aerial tramways will allow unloading of ships without the necessity of building vulnerable docking facilities.

Whether or not atomics will be limited is difficult to forecast. As more and more atomic munitions are manufactured, atomics begin to approach the conventional. Nevertheless, the decision to use or refrain from using them will be a major political decision. It is desirable for our forces to be able to fight with or without atomics.

Since, despite any agreed or tacit limitation that would withhold the use of atomics, the actual initiation of atomic warfare can take place on a moment's notice, it will be essential that troops be prepared to use atomics at any time.

VIRTUALLY every allied country threatened with local aggression has armed forces of its own. The United States has equipped these forces, assisted in their training, and can expect them to give reasonably good accounts of themselves, provided they are assured that the United States will come rapidly to their assistance. No mere political assurance is adequate. The provision of adequate logistic support to these indigenous forces, together with the early arrival of American troops, become the critical factors in any local war. These are both critical logistical problems.

Since our airlift will be fully occupied moving American forces to the threatened area, the logistical support of indigenous forces must be provided for *in advance* by reserves positioned in the country threatened—reserves sufficient to last until additional supplies can be delivered by sea from the United States.

Availability of reserves in threatened countries depends in turn on the willingness of the United States to appropriate necessary foreign aid funds. I do not believe that great stockpiles of American equipment need be provided for this purpose at some American controlled base overseas. Equipment stockpiles which are not drawn on continuously tend to become obsolete. Maintenance of such reserves in our overseas bases is an expensive proposition.

Accumulation of shipping at overseas bases is a much slower process than it would be in the United States. Loading is far more susceptible to delay by active interference. Before 1962 I hope that all the allied nations will have their own forces well armed and provided with reserves adequate to last until emergency resupply can arrive by sea from the United States.

"Small items are being packed in standard Conex shipping containers to make easily handled loads."



Movement of American troops requires a different solution. For the first few days after the outbreak of local war, we can depend on local reserves for the supply of items common to both the local and United States forces, particularly for such heavy tonnage items as artillery ammunition and POL.

We cannot afford to stockpile reserves of items peculiar to the American forces in all threatened countries. We therefore face the necessity of selecting critical areas where we should stockpile an austere list of critical supplies of types not furnished to the local armies—supplies sufficient to support whatever forces we propose to airlift into a threatened area—with the expectation of moving these supplies rapidly by air or water and delivering them concurrently with the arrival of troops from the United States.

Airlift of troops and the equipment they must carry with them from the United States is a function of aircraft and also of air bases at the terminal point and all along the line of movement. The capability of runways to stand the continuous pounding of many heavy planes, the capability of the bases to fuel, service, and repair planes passing through, the availability of

enough bases to reduce distance between stops so that a lesser proportion of the payload of each plane is taken up with gasoline—all are critical.

Any rapid move, moreover, must depend on facilities already in existence. In the case of air movements, this means primarily commercial facilities, supplemented by such MATS facilities and military air bases as are in existence.

Speed of movement of a force such as a division to meet a peripheral war threat is dependent on the speed with which personnel and some of the lighter equipment of the division can be air transported with limited air transport over a limited system of air bases and the speed with which the remaining equipment and maintenance supplies for the division can be delivered by sea.

Arrival of the airborne echelon should stiffen the morale of the threatened country. Arrival of both echelons is necessary before the fighting capability of the unit is fully realized. By 1962 we will have roll-on-roll-off ships, fast enough to sail unconvoyed, capable of loading or unloading at unprecedented speed that part of the personnel and equipment not carried by air.

THE major logistical requirement peculiar to a local war, other than speed of reaction, is assurance that expenditures of supplies and equipment will not be permitted to reduce our readiness for general war. To provide this assurance, we will maintain a standby industrial production base which, together with whatever industry is in current operation, will produce at the rate of expenditure estimated for a local war.

LOGISTICS has become far too complicated a function to be executed by amateurs hastily assembled into provisional organizations. Careers of our officers in the logistics field must be so managed that they acquire the background and understanding that is necessary to handle the tremendous tasks which will face them when changes in weapons, strategy and tactics require changes in logistics.

We must man our small communications zones and the Advance and Base Sections of our large Communications Zone with numbered logistical commands. Their personnel must work together and train together overseas and in the United States, just as the personnel of a division work and train together in peace as well as in war.

It is not necessary to throw away all we have learned about the tactics and techniques of logistics in prior wars merely because we can cause larger explosions to take place at greater distances, any more than it has been necessary to throw away the Field Service Regulations that guide the operations of our larger combat units. It is necessary, of course, to make appropriate modifications to in-

crease dispersion, to guard against fallout, to expedite the delivery of critical items, and to organize areas for damage control, repair of atomic destruction and protection against infiltration.

A unit well trained and experienced in logistic fundamentals should be readily prepared to meet the expected in atomic war and improvise and modify its operations to whatever extent is necessary to meet unforeseen developments.

1962 LOGISTICS—

A FORWARD LOOK

IN SUMMARY, then, my conception of logistics in the atomic era is that in spite of increases in mechanical and electronic equipment, we can and must be able to establish a major downward trend in the tonnage requirements of our troops. We will accomplish this by scientific improvements of our equipment for greater reliability, by simplification of our equipment for ease of maintenance, and by austerity. Combat troops will operate at a level of austerity that they have heretofore experienced only immediately after landings on a hostile shore.

We will be able to provide from reserves, already manufactured, the requirements of our troops in the critical early phases of a general war, in spite of whatever disruption of our industrial production base may take place. We will have large reserves stocked in dispersed and protected locations in theaters of probable combat so that we will be able to support our troops overseas until deliveries can be made from the United States. In spite of difficulties and losses, we will be able to move troops strategically

and deliver personnel and supplies to combat theaters.

To deter or resist local aggression, we will have Army forces in continental United States ready for immediate movement. We will be able to move personnel and limited amounts of equipment rapidly by air. We will be able to deliver heavy equipment and supplies rapidly to them from overseas stockpiles already established. We will be able to replace promptly whatever munitions they expend so as to maintain our readiness for general war.

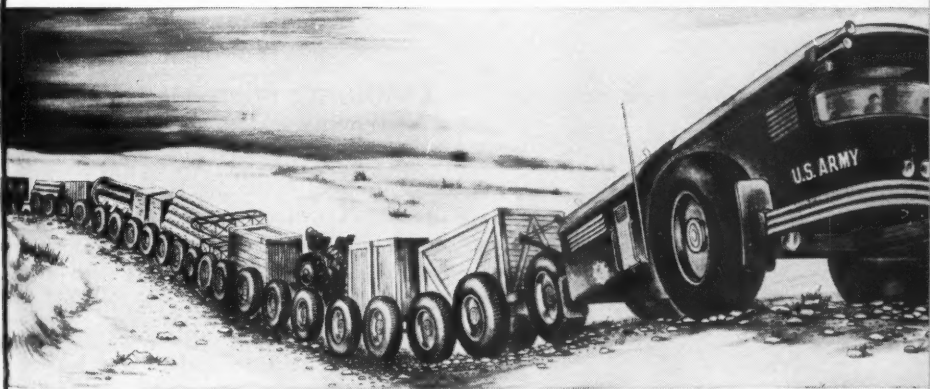
Within combat theaters, support and service units will be prepared to defend their own installations. Supply movements will require protection, especially in the forward areas. A considerable commitment of combat troops to the protection of the lines of communi-

cation will be essential.

To accomplish all this, we will not need to "throw away the book" and develop a whole new system of logistics. We will develop professional logisticians who can modify what has been developed through years of experience to include the necessary provisions for larger explosions. We will have major logistical organizations that have served as units in time of peace so that they can maintain their cohesion under enemy attack and have the flexibility to initiate changes when unforeseen developments occur.

Joined in concerted effort, these men and these organizations will continue to support our combat troops regardless of danger or destruction in any warfare of the future—limited or general, atomic or non-atomic.

"We must have cross-country vehicles that can detour the bottlenecks." Shown here is artist's concept of a nuclear powered logistical cargo carrier currently under study.



1962 The Response

THE MEN-- THEIR SKILLS AND THEIR WELFARE

LIEUTENANT GENERAL DONALD P. BOOTH

Deputy Chief of Staff for Personnel

Department of the Army



ASSURING that soldier quality keeps pace with the increasing demands of modern weapons and new tactical concepts is the major personnel objective of the Army. Several positive steps are being taken to attract, retain and utilize effectively those fighting men who possess the skills, aptitudes and capabilities so essential to our Nation's security.

Until recently a man's general level of intelligence was the sole indicator of his suitability for any Army job. The higher his mental level, the better his qualifications were considered to be for any

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ARMY INFORMATION DIGEST

assignment. To provide a more selective and precise method of predicting individual success in specific occupational areas, the Army has developed a system of aptitude tests known as the Army Classification Battery. These still emphasize quality, but the accent is the realistic one of quality in terms of probable job performance.

There are nine of these aptitude tests, now used in a total of seven combinations, or aptitude areas. Regular Army reenlistment standards placed in effect in April 1957 established that, with certain exceptions, individuals must achieve satisfactory scores in at least three of these areas. This criterion may at a later date be applied for original enlistments as well. In any event, it points up the fact that to be retained as a career soldier today, a man must possess aptitudes of both current and future usefulness to the Army.

EVEN NOW, the Army is in the process of adopting job proficiency tests, which will establish uniform standards to determine an individual's qualifications to perform a specific job. Implementation will be started early in 1958, with initial priority being given to critical specialties and those in which there is evidence of malclassification in the field. This, coupled with a projected Army-wide promotion system based on merit, will provide incentive for the soldier interested in making a career of the Army and assure that each enlisted job is staffed by a competent soldier. Besides identifying the highly qualified, these proficiency tests are two-edged, for they also provide a basis for the



reduction and possible elimination of the unqualified.

Also under development is a streamlined name assignment system to provide improved procedures for rapid and accurate assignment of key enlisted leaders and technicians. This will permit more personalized treatment for valuable men, give them recognition as individuals, and facilitate placing the right man in the right job at the right time.

IN COMMON with the other Services, the Army, by reason of strength fluctuations and rapid technological advances, has been hampered by excessive numbers of personnel in the higher enlisted grades in relatively non-technical skills (such as truck drivers, cooks, MPs) for which there is only a limited requirement, and a critical shortage in the same grades of personnel in the more technical highly skilled and combat leadership areas. Skills for which there is a limited requirement have come to be known as "soft" skill areas; those in which there are critical shortages are "hard" skills.

During the past two years, a program of mandatory retraining by the major commanders has

largely eliminated this unbalanced condition, permitting a better utilization of available manpower and a more equitable distribution of personnel in the upper grades.

Despite this action, the problem will be a recurring one, although its extent and impact should be considerably lessened by the new reenlistment criteria, by implementation of job proficiency testing, by the projected promotion system, and by name assignments of key personnel. New testing and qualification devices will therefore have to be accompanied by a critical attitude toward the reenlistment of personnel whose "retread" value is low and who do not possess the skills the Army needs.

By these several means, the Army is attempting to strike a realistic balance in its "quality" requirements. Obviously it cannot and indeed should not expect to retain any disproportionate share of the Nation's high-quality personnel resources. Neither can it place exclusive reliance on the formulae utilized in testing devices, helpful as these may be; for proficiency gained by the experience of years of soldiering will often compensate for shortcomings in natural aptitudes or desirable intelligence levels.

The Army's approach, therefore, is completely practical. We shall seek to retain those men who can



LIEUTENANT GENERAL DONALD P. BOOTH is Deputy Chief of Staff for Personnel, Department of the Army.

provide a creditable performance in the skill areas we need, to include the veteran soldier who by his decorations, conduct, experience, and length of service has demonstrated his value.

WHETHER enlisted or inducted, even for a relatively short period, the man who can be trained can be used by the Army. But the man who cannot be trained, or who can be trained only in the relatively simple skills, whose intelligence level is low and whose aptitudes are rudimentary, is a very poor investment for tomorrow's Army. He contributes little or nothing to operational efficiency; indeed, he is an expensive luxury to maintain, and in some cases may be a positive danger to his associates in time of war.

The Army definitely does not want such people. It intends to deny their enlistment and reenlistment and to take such other action as may be necessary to separate them. This same policy is extended to include the inductee, and research has been undertaken to facilitate the early detection and elimination of unproductive personnel from this source as well.

The end results of these measures, with their emphasis on quality and the proper distribution and utilization of skills, are to cull out the marginals and to retain those whose aptitudes will permit assignment to more than one occupational field.

Thus the career soldier of the future will be of higher quality and will have greater promotion opportunity. This will encourage young men toward an Army career and enhance the reenlistment rate of

those who are physically, mentally, and morally fit.

The Army has difficulty—as do the other Services—in attracting and retaining the kind of people it needs. However, a great deal has already been done to better the lot of the soldier, much of it with aid of the President and of the Congress, during the past two years.

BY THE spring of 1954, it had become painfully apparent that the rewards of a military career were becoming increasingly out of line with opportunities in private enterprise. Disparities between military and civilian pay were continually increasing. Traditional fringe benefits for the military which had historically offset some of these differences had been markedly reduced or eliminated. On the other hand, industry was increasingly offering benefits hitherto unique to the Services. Reenlistments were at a low ebb, and it was essential that a balance be struck between the attractions of civilian pursuits and those of the military services.

In the latter part of 1955 the Services presented a comprehensive legislative program to the Congress, designed to improve the welfare of service personnel and thereby improve retention rates. The bulk of this proposed legislation has since become law.

THE first action, in 1955, was the Career Incentive Act which provided pay increases for all career soldiers. It increased incentive pay for hazardous duty, raised the travel per diem rate from \$9 to \$12 and instituted the dislocation allowance. This last factor was particularly significant.



THE swiftly changing United States Army has become a service for capable and talented youth. This fact will be even more true in 1962 than it is today.

POSITIVE steps are being taken to attract, retain and utilize effectively those fighting men who possess the skills, aptitudes and capabilities so essential to the Nation's security.

WHETHER enlisted or inducted, even for a relatively short period, the man who cannot be trained, or who can be trained only in the relatively simple skills, whose intelligence level is low and whose aptitudes are rudimentary, is a poor investment for the Army of the

Although the principal costs of moving are borne by the Government when an individual changes station, he has nevertheless invariably been out of pocket each time he relocated his family. By the Career Incentive Act the Congress recognized this, and provided an allowance equal to one month's basic quarters allowance to help defray these costs.

In 1956 the Congress enacted the Dependent Medical Care Act. This too was a recognition of changing times, and was a departure from previous practices. In the pre-World War II Army there were sufficient doctors and dentists and sufficient space in Army hospitals to provide adequate care for dependents. This situation had deteriorated rapidly until by 1955 it was estimated that at least 40 percent of dependents were unable to get adequate service medical care, and were thereby deprived of one of the major Service benefits.

The new Act specifically authorized medical care for depend-

ents of active and retired military personnel in military facilities whenever available. In addition, however, it authorized the use—with minimum cost to service personnel—of civilian hospitals and facilities for the wives and children of active-duty servicemen in the United States or abroad. Care may include hospitalization, medical and surgical treatment, obstetrical service to include prenatal and post-natal care, x-ray examinations and laboratory tests. For all practical purposes, the care provided in civilian medical facilities is the same as that afforded by Service facilities. Although normal outpatient care is excluded, certain services usually listed under this heading may be provided.

ANOTHER recent legislative innovation is the Survivor Benefits Act. Previously, Government Life Insurance, National Service Life Insurance and the Contingency Option Act provided for dependents in the event of death of the

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Future—or for the Army of Today. The Army definitely does not want such people. It intends to deny their enlistment and reenlistment.

FUTURE warfare will stress the independent action of small, flexible, highly mobile, widely dispersed battle groups operating with the support and under the threat of nuclear weapons. Effective performance under these conditions will require soldiers who are emotionally stable, capable of handling and maintaining the most complex weapons and equipment, and capable of reacting swiftly to changes in battlefield conditions while under extreme stress.



servicemen. The Survivor Benefits Act is the most comprehensive measure that has yet been taken in this area, and contains four principal provisions:

First, if a serviceman dies while on active duty his widow receives six months base pay or \$800, whichever is larger, but not to exceed \$3,000.

Second, all service personnel began contributing to the Social Security System in January 1957. When the service member dies, his widow or minor children begin to receive a monthly income from Social Security. Widows without children begin to draw such benefits at age 62. The exact amount of income varies with individual circumstances but can be fairly substantial.

Third, if a serviceman dies on active duty his dependents receive another monthly income from the Veterans Administration which amounts to \$112 plus 12 percent of base pay at time of death. For a widow these payments continue

until she dies or remarries.

Finally, the Survivor Benefits Act cancels out the \$10,000 free insurance provided under the Servicemen's Indemnity Act. Holders of Government Life Insurance or National Service Life Insurance retain all rights, and previous holders of these policies may have them reinstated, thus providing for their survivors not only the benefits of the new law, but the full proceeds of these policies as well.

TWO additional legislative enactments also serve as important incentives. First, the authority has been indefinitely extended under which all service personnel may retire in the highest rank—permanent or temporary—satisfactorily held for at least six months. Second, the Congress has authorized a readjustment pay for Reserve officers involuntarily separated from active service to ease the transition of these officers and their families from military to civilian life.

The Army and Air Force Augmentation Act of 1956, which contemplates an increase of approximately 12,000 Regular Army officers above present strength by 1963, with the principal source from Reserve officers on active duty, also constitutes a career inducement. Acceptance under this program will resolve uncertainties relative to continued service which concern these officers.

Other, less widely known efforts to improve the "climate" of Army service include continuing actions to reduce the burden of unit administration and to minimize the necessity for family separations. The Army is also attempting to increase the prestige of the junior officer, the NCO and the specialist within the Army—and of the soldier in the civilian community. In the area of fringe benefits, it is actively striving to increase the variety of items which may be sold in Post Exchanges, and to raise existing price limitations to provide higher quality merchandise.

THE Army's educational system is another career inducement which has long-range implications for the Army of the future. In addition to its officer schooling system and an extensive civil schooling program, the Army today operates 40 schools training personnel in 385 Military Occupational Specialties involving combat, technical and administrative fields.

Through its program of General Education Development the Army provides its soldiers with the facilities, incentives and professional guidance to continue their general education without cost in Army Education Centers. Army members

are given the opportunity to enroll with the United States Armed Forces Institute for a one-time \$2 fee; and those who wish to increase their formal education in nearby schools and colleges may receive substantial tuition assistance as well.

This—the positive side of the picture—establishes very clearly that there are many things "right" with Army careers for intelligent, capable individuals whose inclinations are toward military life.

MANY problems remain, however. One of the most important grows out of the fact that today most of the Army's officers and senior noncommissioned officers are married and have children. These people constitute a mature, stable element from which highly competent, responsible leaders are drawn. Adequate housing is required for these families, and although progress has been made and will continue to be made, the ultimate solution involves tremendous cost and can only be achieved over a period of years. (See "Family Housing for the Army," July 1957 DIGEST.) The fact that the Army is facing these shortcomings squarely and attempting to remedy them is the best indication of its awareness that quality and effectiveness depend in large part upon the welfare of the career soldier.

Another problem lies in the Army's critical requirements for skilled technicians whose training requires costly and extensive schooling, and for well-trained, competent, imaginative combat leaders. In the first instance, the Army is placed in the position of competing with industry to retain

skilled personnel trained by the Army.

The Army has not been able to meet this competition because immediate financial rewards are not comparable. Industry needs these skills, frequently because of defense-generated requirements, and sometimes the necessary training has been available only within the military services. Loss of these critical technicians leads to expensive and continuous training to meet requirements.

THE need for combat leaders is no less acute. Their training and acquired skills are without civilian counterparts, it is true, and consequently their skills are not as marketable outside the Army. Yet competent combat leadership is the very foundation of any fighting force. Without it, defeat in battle is virtually assured.

Pride of identification as a combat leader, among men of the quality demanded in a nuclear age, is not always an acceptable substitute for the more material rewards to be found in other fields. While none of the Services can expect to match the monetary compensation offered by business and industry, securing pay and emoluments more commensurate with the compensation available in industry at roughly comparable skill levels should assure retention of quality personnel with these essential leadership capabilities.

Future warfare, it is generally

agreed, will stress the independent action of small, flexible, highly mobile, widely dispersed battle groups operating with the support, and under the threat, of nuclear weapons. Effective performance under these conditions will require soldiers who are emotionally stable, capable of handling and maintaining the most complex weapons and equipment, and capable of reacting swiftly to changes in battlefield conditions while under extreme stress. Army personnel research in this area holds promise of producing techniques by which potential combat leaders can be readily identified, as measured by the personal factors and special abilities required of the successful soldier on future battlefields.

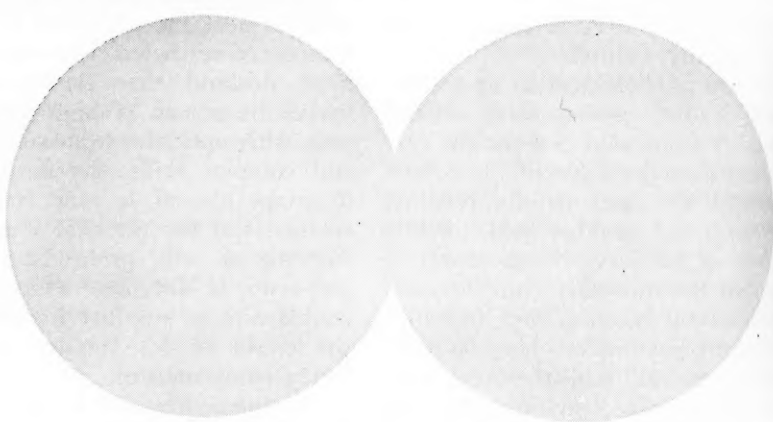
WE shall have no new breed of men to meet the challenge of the future. Nevertheless we can and must demand that the modern soldier be a man of high quality, possessing aptitudes to master new and complex skills, the flexibility to adapt himself to new circumstances, and the physical stamina, strength of will, pride, integrity, and sense of discipline which will enable him to conduct himself to the credit of his country under trying circumstances.

The attraction and retention of this type of soldier is the primary personnel objective of the Army. His presence on the battle scene is our Nation's best assurance of victory in any war of the future.

1962

The Response

COMBAT INTELLIGENCE FINDS



THE TARGET

BRIGADIER GENERAL ROYAL REYNOLDS, JR.

**Director, Plans, Programs and Security
Office of the Assistant Chief of Staff, Intelligence
Department of the Army**

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ARMY INFORMATION DIGEST

AMONG Army capabilities in 1962, we foresee not only the employment of atomic firepower, advanced missile systems, and small, mobile combat elements but also new developments in combat intelligence and its integral component, target acquisition. This may prove no less startling than the more publicized supersonic missiles and atomic weapons.

Like the weapons systems it supports, combat intelligence will utilize the latest advances in science and technology to gain information of the enemy and to acquire and locate the most profitable targets for our firepower.

Simply and broadly stated, the mission of combat intelligence is to resolve the uncertainties surrounding the enemy, the weather, and

as information of the area of operations, including the terrain and weather.

In consonance with the future employment of our weapons systems and changes in combat organizations, new methods, means and techniques of collection, processing and dissemination of intelligence and intelligence information are being devised. The long-established principles of combat intelligence remain valid, but advances are being achieved in the improved speed, accuracy and completeness, under all kinds of weather conditions, with which information can be collected and transmitted.

One of our most critical requirements is target acquisition—that is, the collection and analysis of infor-



the terrain. Combat intelligence must provide the commander with all available intelligence information in meaningful form that will enable him to accomplish assigned operational tasks and minimize the risks involved in the ensuing combat actions. This includes knowledge of enemy dispositions, strength and capabilities, as well

mation which enables the commander to determine relative target importance, reach a decision as to relative suitability and efficiency of available conventional or atomic weapons, and establish a priority of attack. It encompasses the detection, identification and determination of target locations, whether ground or air.

With their vastly increased firepower and range, the 1962 field army weapons are particularly dependent on adequate target data. The 1962 field army itself will be characterized by improved maneuverability, both on the ground and in the air; by increased dispersion; by reliable and more flexible communications; and by tremendous firepower. Relatively small, highly mobile battle groups will operate independently for extended periods in the fluid warfare of 1962.

In comparison to World War II and Korea, the field Army combat zone will be greatly extended in depth and width. A weaponry of guided missiles and free rockets, with increased accuracy and range and capable of delivering both atomic and conventional explosives, will dominate the battlefield. In such a battle area, the accurate, timely processing of usable intelligence information and the production of intelligence must be geared to the speed and flexibility of mobile operations.

IN THE PAST, tactical organizations developed a definite compartmentation of operations and of combat intelligence. In the highly mobile type warfare of 1962, how-

ever, whether it be a limited or all-out war, a closer union of operations and combat intelligence must ensue, though each will retain its identity. Regardless of the type of war, the temporary and fleeting nature of many targets will dictate that operations and combat intelligence function almost as a single entity. The nature of the conflict will make it imperative that constant surveillance of both enemy and friendly elements be maintained. As soon as enemy units are spotted, the attack must be initiated immediately to insure survival.

In order to produce combat intelligence, including acquisition of targets, we must first collect the necessary information concerning enemy activities and installations. In comparison with today's capability, the collection potential of future intelligence has been increased quantitatively and qualitatively through improved combat surveillance equipment and techniques. Combat surveillance—the all weather, day and night, systematic watch over a battle area—includes information on friendly and enemy forces obtained by both technical and non-technical means. The term is new, but the function has long been performed by armies in the field.

ON THE 1962 battlefield continued reliance will be placed on



BRIGADIER GENERAL ROYAL REYNOLDS, JR. is Director, Plans, Programs and Security, Office of the Assistant Chief of Staff, Intelligence, Department of the Army.



"Radars employing moving target indicators will distinguish between moving objects and their stationary ground environment."

the soldier as a collector of intelligence information. His capability will be enhanced by improved optical instruments, new battlefield illumination equipment and techniques, and short-range surveillance devices that will permit him to scan close-in areas to detect camouflaged troops and materiel as well as movement during periods of reduced visibility. Further, he will be able to transmit the collected information swiftly to his commander. New lightweight radio equipment for small unit radio nets can be expected in the near future.

Many of the physical limitations of the soldier as a collector, however, will still remain. To offset limitations of sight and hearing, technical sensory devices and systems will be available to battle groups, divisions, corps and field armies. These will extend coverage and permit the commander to employ his maneuvering units and

supporting weapons most effectively. Following are some developments which may be expected:

Aircraft specifically designed for observation will be organic to each division. These can carry technical sensory systems, aerial cameras, television, radar and infra-red devices. For example, electronically controlled drone aircraft for photographic reconnaissance will be available within the field army. These would be employed when enemy antiaircraft capabilities render piloted aircraft unsuitable. Because the range of drone aircraft is more limited than that of piloted reconnaissance aircraft, drone sites will be located in the more forward areas, with film processing and photo-interpretation accomplished at the drone site.

Aerial photography has long been employed as a surveillance means, but it has been of limited utility to tactical commanders at

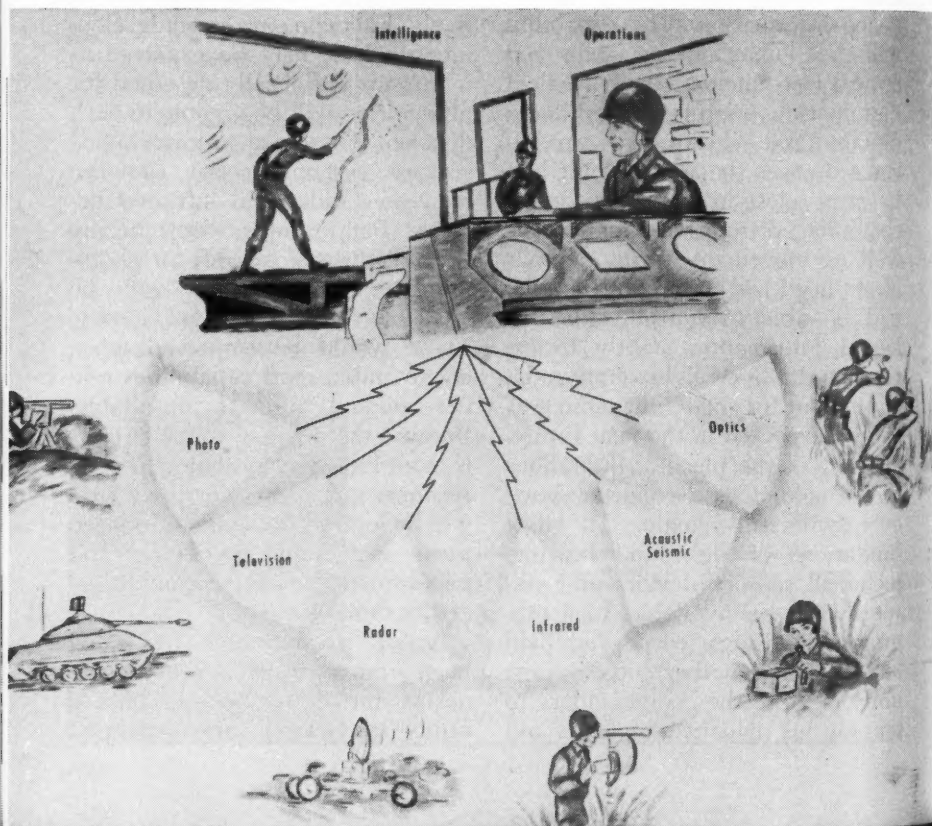
lower echelons because of the time and facilities needed to process films and prints. In the Army of 1962, however, it will assume greater significance. Aerial cameras capable of high speed operation at increased altitudes will be utilized. Film will be automatically developed in multiple prints and interpreted at mobile field laboratories. Within minutes, the resulting information will be in the hands of the requesting agencies.

Airborne radar promises a marked increase in our surveillance capability. Though very successful

in detecting the presence of metallic objects in the sky, radar encounters many new problems when used to locate objects on the ground. Trucks, tanks, and men are frequently disguised in the radar signal returns, so that only very prominent objects may be distinguished from the "ground clutter" of trees, buildings and the like.

Military targets, of course, are designed for concealment. Radars employing moving-target indicators will distinguish between moving objects and their stationary ground

"Focal point for providing information concerning targets, enemy strength and locations will be the intelligence operations center . . . at battle group, division, corps and field army levels."



environment. Airborne radar, furthermore, will have an all-weather capability, with its range and coverage dependent upon the flight capabilities of the aircraft.

All objects in the universe emit electromagnetic radiation, the intensity depending in part on the temperature of the object. For targets of battlefield significance, this radiation lies in the infra-red region just beyond the visible light spectrum.

Devices which locate material and personnel by detecting this radiation are known as passive infra-red detectors. This equipment offers a twofold advantage—first, there is no known method of detecting its use; and second, the heat radiation of targets cannot be completely suppressed, making it difficult to camouflage. Availability of devices to provide this information can be expected.

No one of these systems is complete in itself, of course. All means will be employed and integrated to provide a composite of the collected data. It should be noted that these systems—photography, radar, and infra-red equipment—only provide a part of the collection effort and record of target information. In support, there must be personnel and units which can extract and interpret the data, describe the enemy situation, and define the location, composition, and disposition of a hostile target.

Specifically, troops at company and battle group levels will utilize ground-based, portable, moving-target indicator radars of varying range capabilities. These radars will give the commander the means to maintain surveillance of critical areas both for early warning and

target acquisition during periods of limited visibility. Movement of personnel and vehicles will be indicated in terms of range and azimuth. Infra-red viewing devices used in conjunction with front-line radars will provide the necessary target identification.

PRISONER-OF-WAR interrogation will, as in the past, provide an additional valuable source of information. Interrogators with a thorough knowledge of the enemy's language will be employed well forward in the battle group zone. Interrogation will occur as close to the point of capture as possible in an effort to obtain information of immediate tactical value. Selected prisoners, after evacuation from the division zone, will be subjected to more deliberate and detailed interrogation.

With communications and electronics playing such a dominant role on the battlefield, adversaries will make a major effort to disrupt each other's means for command control and target acquisition. The Army must therefore have a capability for waging electronic warfare as a prerequisite to success in any future operations. Equipment will have been improved and counter-counter-measures training emphasized to ensure the provision of necessary communications. A reliable communications network to transmit the information immediately from the collection means to the consumer is demanded.

FOCAL POINT for providing information concerning targets, enemy strength and locations will be the intelligence/operations center. There all intelligence will be

assembled. Pertinent data will be screened and swiftly transmitted to higher, lower and adjacent commands. Information appropriate to the level of command will be transmitted to its supporting weapons units where firing data will be computed and preparation made for engagement of targets.

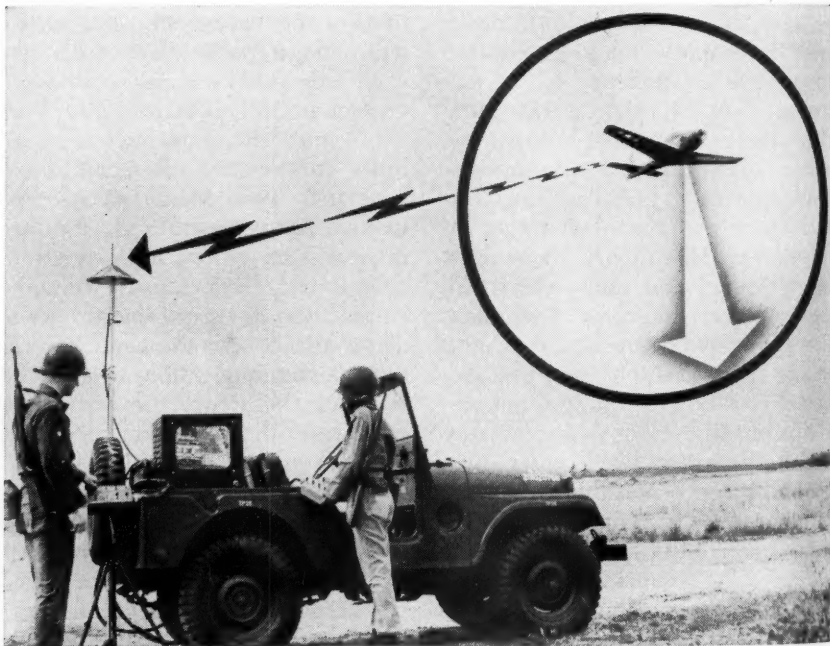
Thus the intelligence/operations center will function as the nerve center of the command. The information received will be prepared in a standard format for introduction into an Automatic Data Processing System (ADPS) which will include mechanical and electronic equipment. There the data will be analyzed by intelligence officers, and displayed as required for use in operational planning. Gaps in combat intelli-

gence information will be noted and instructions to collect the data will be issued.

Use of scientific and technical collection devices within the commands will provide more information, more rapidly, under all weather conditions and over greater areas. The demands placed on the command and its intelligence staff to absorb, file and utilize the essentials of the available information will be enormous. In order to cope with a problem of such magnitude, the 1962 field army will incorporate an Automatic Data Processing System.

The battle group will be the lowest echelon at which information will be introduced into the ADPS. Here intelligence data will be placed in a format designed for

Unmanned aircraft will send back aerial views of the battlefield, using light TV equipment.



use in electronic memory devices. Some of the material will be stored at this level for future use while appropriate data is transmitted electronically to division for introduction into the ADPS there.

ADPS devices will have increasingly greater capacities at each succeeding echelon. The ADPS is expected to reduce or eliminate the requirement for the time-consuming preparation and dissemination of the periodic intelligence report, intelligence summaries, and special intelligence reports and studies.

To illustrate the support provided by ADPS, assume that the battle group commander is given an immediate mission to seize a terrain objective. His first consideration is to assemble information on the enemy and his assigned area of operations. Through his intelligence officer, the commander employs the ADPS to obtain all information that will assist in the evaluation of his assigned mission—location and strength of the enemy, hostile supporting weapons, terrain considerations, soil trafficability, fortifications, and the like.

The battle group ADPS prepares and presents the reply to him in either visual or written form. Information not available at this level is requested electronically and automatically from the divisional ADPS element. Within a few minutes, the battle group commander will have the complete information he requires.

Despite a multiplicity of elec-

tronic aids, it should be emphasized that the combat intelligence system of the future will not necessarily effect a savings of personnel. If anything, additional personnel will be required to operate and maintain the equipment. Complete, accurate, and timely combat intelligence, with its resultant influence on maneuver and employment of command weapons, will be the really significant achievement.

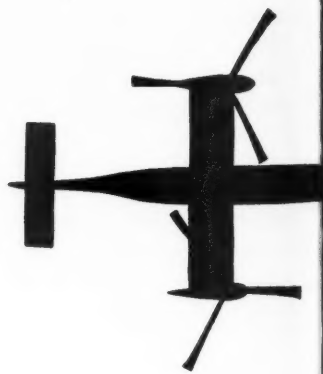
ALL of the concepts and equipment described have been, or are currently being, tested. Many of the prototype items are now undergoing modification as a result of preliminary experiments. Interim models will soon be made available for comprehensive troop testing.

Combat intelligence and target acquisition in future warfare will never be the product of any single person, agency, or piece of equipment. Instead, intelligence must utilize a wide variety of collection media, insure the rapid transmission of data to intelligence/operations centers at the several command echelons for evaluation and integration, and produce a timely, adequate and complete product to support combat operations.

Basically the intelligence tasks are no different than in years past. The intelligence requirement for the future involves the integration of new means and methods, new devices and techniques to ensure immediate responsiveness to the more mobile and fluid characteristics of the Army of 1962.

1962 The Response

ORGANIZATION AND TRAINING-- 1962 MODEL



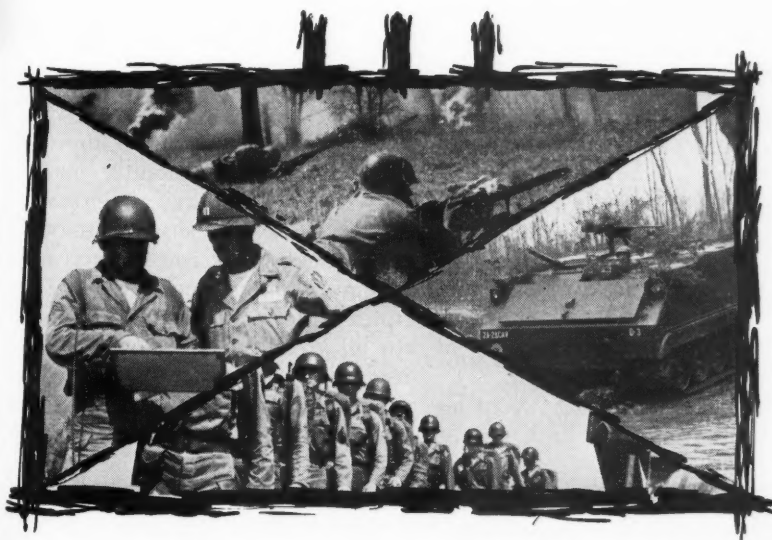
BRIGADIER GENERAL T. F. BOGART

**Director of Organization and Training
Office of the Deputy Chief of Staff for Military Operations
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ARMY INFORMATION DIGEST

THERE will be no place in the Army of 1962 for the exponent of the single combat arm or the single service, or for the individual whose interests and knowledge have not progressed beyond the confines of his arm or service. The desirable individual—the one who survives, the one who contributes, and the one who wins on the battlefield of 1962—will be the individual whose vision, education, and training equip him for varied tasks in a diversified Army . . . Small unit leaders will have to act on their own initiative to a greater extent than heretofore. Even the individual soldier must be trained to operate by himself. The individual soldier will remain the most critical entity in warfare. . .



HOW LONG is five years? Because of the great progress being made in developing new implements of war, five years in the current military environment may be the equivalent of one or more generations in the past. Thus, five years will see major changes in the nature of Army weapons and equipment, organization, tactics.

Five years, on the other hand, is a relatively short period of time to the military planner or to the individual engaged in research and

development or combat development functions. Five years is less than the normal developmental cycle for a new item of equipment. It is less than two three-year duty tours, and only slightly longer than one school tour plus a succeeding three-year tour.

As a result of the rapid technological advances being made today, it becomes increasingly difficult for the military planner to forecast accurately the future modernization of the Army. This fact

poses a much greater problem than heretofore in incorporating future concepts in training literature and in designing future organizational structures.

Because decisions being made today affect directly the organization and training of the Army in 1962, we should be able to forecast these changes with a reasonable degree of accuracy. Our organizations and our training programs must anticipate future requirements if the Army is to be effective.

THE ENVIRONMENT

THE operational environment of the Army of 1962 will be affected greatly by technological advances in the following fields:

- Increased friendly and enemy atomic stockpiles, including small, low-yield weapons.

- Improved guided missiles and rockets which will extend the range, mobility, and flexibility of fire support.

- Improved combat vehicles which will provide a high degree

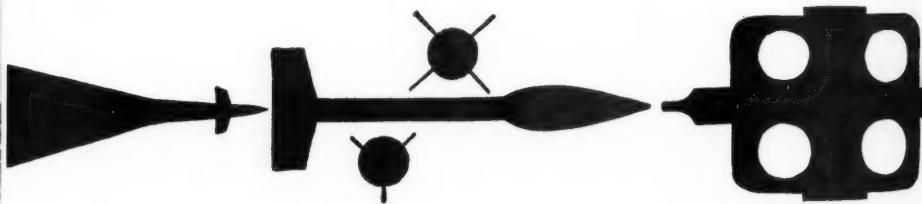
of cross-country mobility, be air transportable, and give some measure of protection against the effect of atomic weapons on a fluid battlefield.

- Improved air vehicles which will enable commanders to move personnel, equipment, and supplies wherever required within the battle area, as well as to perform other varied roles.

- Communications and electronic devices which will enable commanders to exercise improved control over dispersed forces and provide improved ways of obtaining knowledge of enemy forces.

THESE new and improved means require constantly increasing emphasis in five major areas:

INCREASED DISPERSION THROUGHOUT THE BATTLE AREA. Increasing enemy atomic stockpiles will require greater dispersal, extending to all areas which can be reached by enemy weapons. Small units of reinforced company-size—or smaller—must be capable of operat-



JOINT and combined operations must be considered normal, rather than exceptional. In a theoretical field army area in atomic war in 1962, distances, particularly depth, would be increased greatly over those of today and of World War II.

THE clear delineation between the forward and rear areas of the combat zone no longer exists. Personnel in

ing semi-independently. Our deployments must insure that no more than one such unit is subjected to attack by a single enemy nominal-yield atomic weapon.

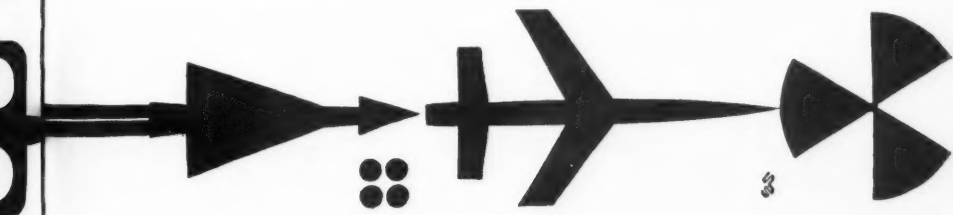
IMPROVED AIR DEFENSE. Enemy capabilities emphasize the requirement for improved air defense; new surface-to-air missiles indicate that the required effectiveness is attainable. Denial of enemy penetration into the defended area will be the objective of air defense forces.

OTHER ACTIVE AND PASSIVE DEFENSE MEASURES. Dispersion and improved air defense must be accompanied by tactical and logistical austerity, improved mobility, concealment, deceptive measures, action at night, and protection in the form of overhead cover, armored vehicles and effective electronic countermeasures. Ground commanders must be provided accurate data on the implications of radioactive fallout from atomic weapons that may be used by friendly and enemy forces.

FLEXIBILITY IN CONDUCT OF OPERATIONS. New firepower and mobility capabilities, plus new and improved means of control, permit wide flexibility in selection of the maneuver plan. Tactics should be designed to locate the enemy, determine his configuration, deliver appropriate fires on acquired targets, and exploit the resultant situations with highly mobile forces. On a strategic level, forces must be organized and equipped so that they can be delivered by air or surface transportation to any area of the world for engagement in either atomic or non-atomic situations on any reasonable type of terrain. Suitable air and surface lift must be provided. The time of initial intervention, particularly in limited war, may be just as important as the time required to close a sizable force.

JOINT AND COMBINED OPERATIONS. Joint and combined operations must be considered normal, rather than exceptional.

In a theoretical field army area



rear areas may be subjected to attack by small groups and enemy long-range weapons. Small units of the combined arms and essential supporting services must be able to operate wherever required throughout the battle area.

Delineation among the combat arms and within and among the supporting Technical and Administrative Services will not exist as clearly in 1962 as it now does. . . .

in atomic war in 1962, distances, particularly depth, would be increased greatly over those of today and of World War II. Standard or normal distances will vary, depending on the nature of the enemy, our own forces and the area of operations, and on the scale of use of atomic weapons.

Planning must take cognizance of the increasing probabilities of limited atomic or even non-atomic war—rather than general war—as the atomic stockpiles of the major powers further increase and a condition of mutual atomic deterrence is reached. However, we can never again expect to be engaged in a war of any type that does not involve the use of atomic weapons or, at least, the threat of their use. Our organizations and training programs must incorporate balanced capabilities for flexible employment in any situation and in any area.

ARMY ORGANIZATION

WHAT Army organizations are required—and attainable—in 1962? The basic requirement is for divisions and supporting forces that

- are capable of defending vital areas throughout the world;
- are capable of sustained land

- combat in either atomic or non-atomic situations on any reasonable type of terrain;
- have high degrees of strategic and tactical mobility;
- are provided with suitable air and surface lift support; and
- are employed by commanders who are progressive in thought, flexible in mind and who exploit to the maximum the full capability of new organizations.

OUR current pentomic divisions—recently adopted—are designed to meet the requirements of the future battlefield. In 1962 we will continue to have infantry, armored and airborne divisions in our force structure; however, all will have the same basic organizational pattern. Each type of division will have modifications in organization and equipment that enable it to carry out its specific role most effectively.

By 1962 we will see significant improvements in the capabilities of these divisions as new weapons and equipment are integrated. No need is foreseen for major structural changes in these divisions by 1962, except possibly in the armored division.

Organizations in 1962 will reflect greater use of missiles and rockets, Army aircraft, lightweight armored vehicles, and other light-



BRIGADIER GENERAL T. F. BOGART is Director of Organization and Training, Office of the Deputy Chief of Staff for Military Operations, Department of the Army.



weight items. Equipment that is air transportable on the one hand and yet has the desired capabilities for sustained combat on the other will continue as major objectives of development effort.

The airborne division of 1962 will continue to be organized with primary consideration for the airborne assault role, with all of its equipment items air-transportable. The organization will be lean, to minimize airlift requirements. More frequent operations of the early linkup and raid types should be anticipated. The airborne division must be appropriately reinforced if employed in a sustained ground combat role. However, this should be the exceptional, rather than the normal, employment. Appropriate airlift support should be provided to enable our forces to capitalize on the advantages of air transport.

Increased mechanization may be expected in our infantry divisions of 1962, thus providing improved

tactical mobility and protection on the atomic battlefield. As a complementary measure, we must incorporate the best attainable degree of air transportability in infantry divisions. Organic and supporting forces will be air transported as required. Appropriate balance must be sought through provision of ground and air mobility in suitable proportion.

On the basis of testing and experience with the pentagonal structure, the Army possibly will develop, test, and adopt new pentagonal armored divisions by 1962. This step would be in accord with one of the basic principles of Army organization—to effect the most favorable span of control at each echelon, and reduce the number of echelons.

Behind the divisions of 1962, we will see increased use of Army aircraft, missiles, and rockets. Pooling of resources will continue to be emphasized. Lightweight armored personnel carriers will be provided

in sufficient quantities to enable selected combat elements in each corps to be mechanized.

By 1962, U. S. Army missile commands will be provided in increased numbers and types to furnish atomic firepower necessary to reinforce the defense capacity of ground forces.

U. S. Army missile commands of 1962 also will include the Redstone ballistic missile — and possibly others—to provide massive firepower with extreme accuracy at varying ranges.

Emphasis will be placed on extending the span of control at all echelons. In a departure from the standard triangular concept, the span of control in our current infantry division varies from three to five basic combat elements plus fire support and control elements at different echelons. One echelon

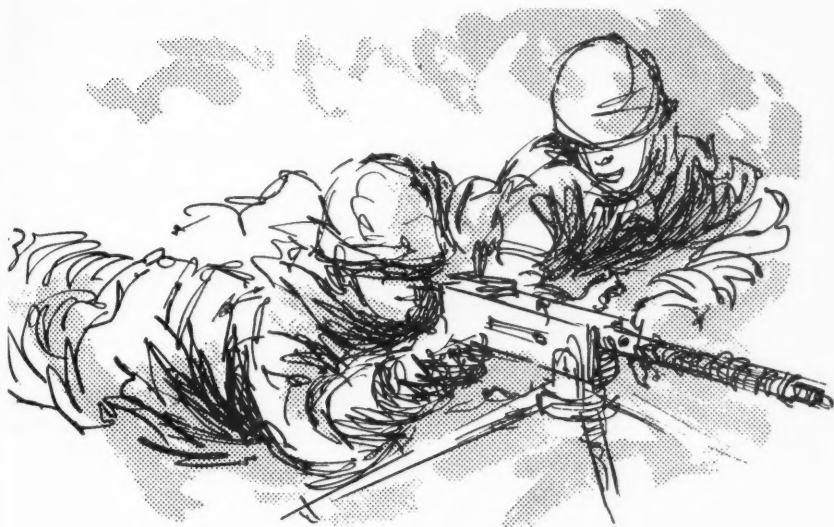
of command within the division has been eliminated, thereby attaining an improved ratio of combat personnel to control personnel.

Further changes may be expected in the span of control as new communications and control devices are provided. A possible extension of the span of control is one of many typical organizational problems suitable for evaluation and test at the Combat Development Experimentation Center at Fort Ord, California.

A further examination of the span of control is also warranted above the division level. For example, the Army Group and Corps echelons are suitable areas for critical evaluations, with a view to possible elimination of these echelons or changes in their roles. Such examination must explore, among other considerations, the



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locale and scale of possible future wars and the most desirable organization for U. S. Army forces in such wars.

Desirably, each commander should be provided logistical support so organized that he could concentrate on operational matters to a greater extent than at present. We find it desirable to provide small field armies (or large corps) with both administrative and operational functions and with command of increased numbers of divisions of appropriate types.

In this area a new concept has been tested and is now in the final stages of evaluation—the Tactical Support Center. The Center assists the commander and his staff by coordinating fire support, air defense, organic and direct support aviation, and electronic warfare. Other activities such as engineer and chemical may be added as required.

The increasing complexity of modern equipment and modern warfare in general makes it im-

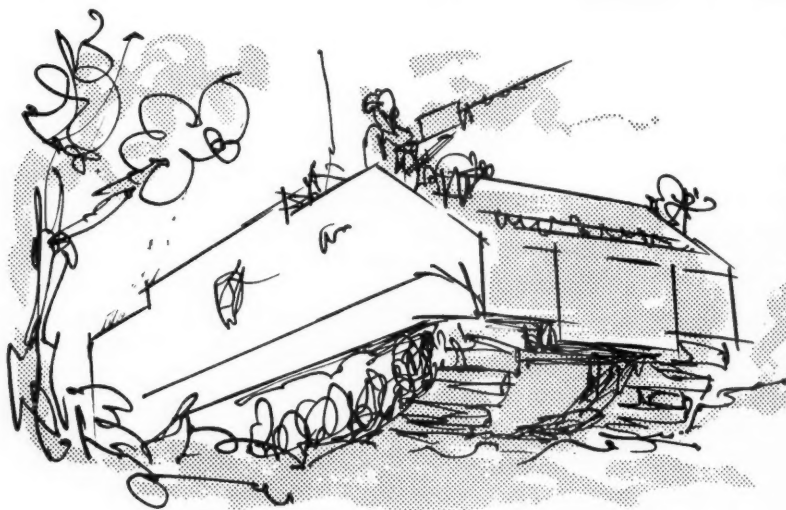
perative that a control agency of this nature be provided. Such an agency will enhance the ability of the staff to react rapidly and cohesively to the requirements of battle. The physical presence of key personnel from various fields of activity, plus automatic data processing and modern communications systems, will permit simultaneous consideration of select problems at several headquarters. Automatic data processing systems would be exploited to provide simultaneous transmission and graphic presentation of information.

TRAINING REQUIREMENTS

CHANGED and improved training for both individuals and units will be necessary for the Army of 1962. The fundamental training requirement is to develop improved methods, devices and procedures to solve the diversified problems created by the new concepts, organizational trends, and equipment.

Shifts of emphasis in training requirements will stem from the

integration of atomic weapons, guided missiles, and rockets; increased Army aviation; and new operational concepts stressing strategic and tactical mobility, and dispersed operations in fluid warfare. This dispersal will cause units to operate "on their own" more than is presently done. Thus, small unit leaders will have to act on their own initiative to a greater extent than heretofore. Even the individual soldier must be trained to operate by himself.



THE FIELD of atomic training will be particularly complex and demanding. Increasing atomic stockpiles, new methods of delivery, new military applications of atomic power other than weapons, and new concepts will require continuing study. Units and individuals must be trained to withstand atomic attack and to exploit the results of the use of their own atomic weapons. Staff officers trained in the employment of atomic weapons must be provided at all echelons from the battle

group up. Not only must technical staff assistance be provided, but commanders and other key personnel must possess sufficient knowledge concerning the employment and effects of atomic weapons to assess intelligently their impact on the land battle.

Increased requirements will occur for personnel highly skilled in manning atomic delivery systems of various kinds, and capable of providing both combat and service support in related fields. Develop-

ment and use of atomic demolitions will create additional requirements. Other military applications of atomic power such as power plants, reactors, and transportation systems will require skilled engineer, transportation, and ordnance personnel. These are only a few of the many significant additional requirements imposed on training by the military use of atomics.

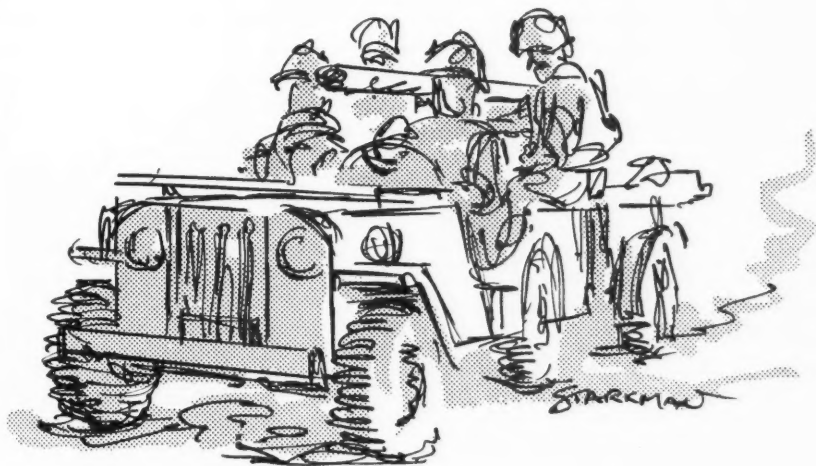
WITH the integration of new equipment on an increasing scale, the concept of "packet training"

has been adopted, and should continue to be in effect during the 1962 period. Under this concept, which has been used effectively in Nike and other training, unit personnel are selected and trained as a packet on schedules so constructed that the courses are completed by the time their equipment is available. In this manner, the operational capabilities of new systems can be fully exploited.

Unit training must emphasize strategic and tactical mobility

include realistic inter-theater air and surface movement of appropriate Army forces of varied size. Such exercises are particularly necessary to obtain and maintain strategic mobility for elements of our strategic reserve.

A mobilization and training base must be provided that will produce and support the balanced forces essential for the varied forms of war that may occur. Selected reserve forces units must possess the capability for early mobilization



under conditions of tactical atomic warfare. Units as well as individuals must be trained for operations in varied areas that permit both maximum and minimum field mobility.

The Army must participate with other services in airborne, airlanded, and seaborne exercises of varying size. In addition, the Army must participate in jungle, arctic, mountain, atomic indoctrination, joint, and combined training exercises.

These training exercises must

and deployment through preconceived and preordered priority treatment, including provision of trained personnel and completion of varied and comprehensive unit training. Priority must be given to reserve units required to round out the Active Army.

THE increasing technical nature of Army equipment requires new training programs to produce the special skills needed in development, operation, and maintenance of complex weapons and equip-

ment systems. Training schedules must provide an adequate flow of critical school-trained and long-lead-time specialists.

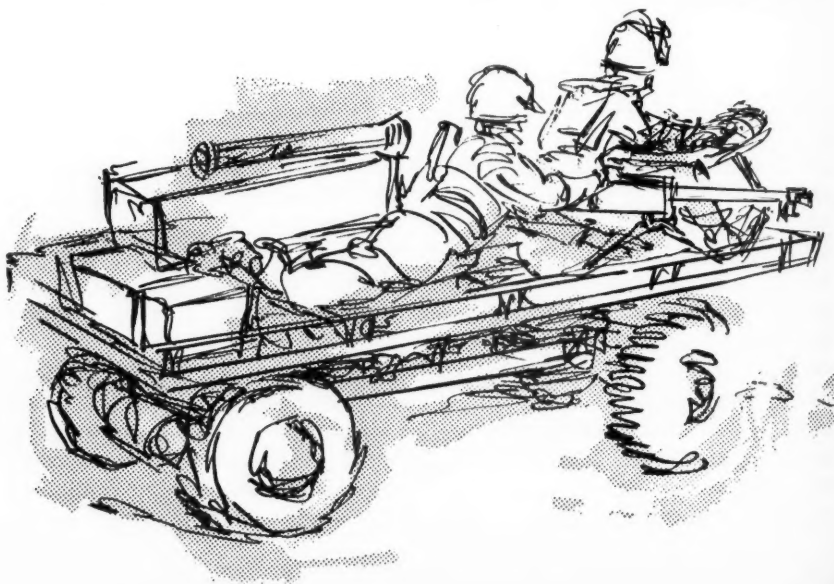
Increasingly sensitive personnel selection devices must be developed to identify individual skills and aptitudes adapted to new weapons and equipment systems. Systems must be devised to forecast training requirements generated by the introduction of new equipment. Increased technical training must be provided in Army schools, and must be actively sought in civilian schools, with emphasis on requirements for engineers and scientists. Training aids and devices must be developed to enhance performance of men in complex weapons systems.

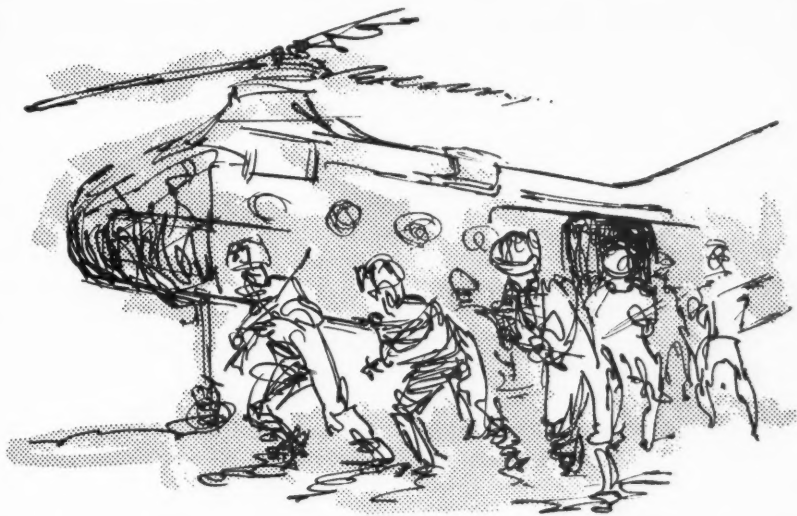
THE world-wide commitment of United States forces as an instrument of United States policy and deterrence to aggression has made it mandatory for officers at all levels to have an understanding of the problems peculiar to such

deployments, together with the knowledge of how to cope with situations short of war.

Emphasis and approach will vary at the different school levels. Officers at lower levels must be prepared to cope with such matters as relationships with local inhabitants, as well as the conduct of individuals and operations of small units in a wide range of peacetime and wartime missions. In the higher level schools, officers must become proficient in operational planning incident to the tasks of such deployed forces; they must be capable of operating in conjunction with indigenous forces with different ethnic and political backgrounds.

The ability to adapt and apply United States military force for the accomplishment of political, psychological and economic objectives of our foreign policy on a world-wide basis should be a requisite to the successful completion of training in the Army's highest level schools. A corollary requirement





must be an increase in language ability of Army personnel.

Army leaders and units must be trained in the conduct of fluid warfare by relatively independent combat groupings of varying size on a battlefield of great width and depth. Training programs and curricula must stress decision-type exercises involving judgment by small unit leaders, and the conduct of independent operations by small units in varying situations.

Commanders of company-size units must be trained to command units that will include elements of all the combat arms and the essential supporting services. Army units must be trained to withstand atomic attack with minimum loss of integrity, and without loss of capability for subsequent counter-offensive action.

We can expect to see increased emphasis in Army Service Schools on training in guided missiles and rockets (both surface-to-air and surface-to-surface), atomic matters, and Army aviation. To keep total school loads within reasonable

limits, we should expect decreases in training pertaining to more conventional weapons and equipment.

Measures such as those recommended by the Cordiner Committee that tend to stabilize the assignment of military personnel will, if adopted, improve the status of training and the operational effectiveness of Army forces. Even so, the impact of technology and new concepts on the Army of the future will be so great that it will cause significant changes in Army training requirements. These changes will apply both in the Active Army and in the reserve forces.

ANOTHER effect of modern weapons and equipment, which must be recognized in training programs, is that the clear delineation between the forward and rear areas of the combat zone no longer exists. Personnel in rear areas may be subjected to attack by small groups and enemy long-range weapons. Small units of the combined arms and essential supporting services must be able to operate

wherever required throughout the battle area. Delineations among the combat arms, and within and among the supporting Technical and Administrative Services, will not exist as clearly in 1962 as they now do. Basic tactical elements of that period may well include infantry, artillery, armor, engineer, signal, medical, and transportation elements.

Technical training required for the new materiel of the future will be interesting, complex, and challenging. However, it will not equal in importance or in complexity the problem of training our most valuable asset—the individual. The individual soldier will remain the most critical entity in warfare, because more reliance will be placed upon the soldier's ability as an individual to react properly and effectively in complex, isolated, independent situations. Research in the field of human engineering must be conducted on an increasing scale to isolate and solve the problems related to training the individual.

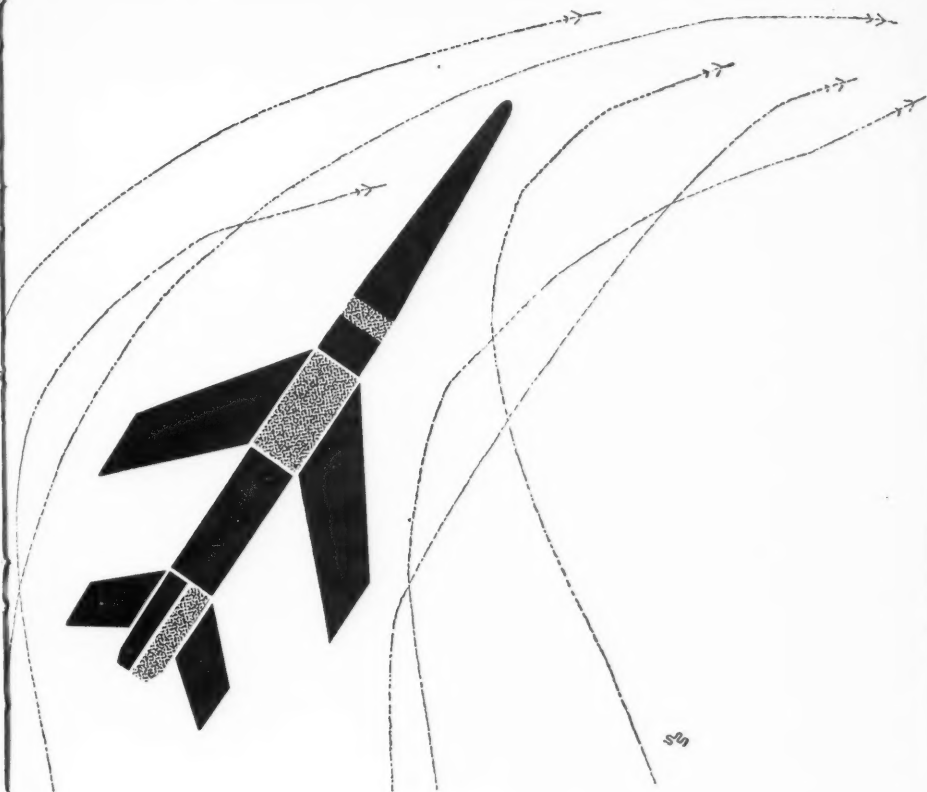
THERE will be no place in the Army of 1962 for the exponent of the single combat arm or the single service, or for the individual whose interests and knowledge have not progressed beyond the confines of his arm or service. The desirable individual—the one who survives, the one who contributes, and the one who wins on the battlefield of 1962—will be the individual whose vision, education, and training equip him for varied tasks in a diversified army.

These requirements pose a sizable challenge. We must prepare today the organizations, the training procedures and techniques, the individuals, and the units that we will require for the Army of 1962. The price in terms of mental toil for the Army as a whole, as well as for its individuals, will far exceed anything known in the past. The Army of 1962 will be as effective as we make it. The manner in which we organize and train our forces for the requirements of the future will largely determine the degree of that effectiveness.

NEXT MONTH:

Technical Service Support for "The Army in 1962"

GIVING substance and support to the capabilities of the Army of 1962 as highlighted in this issue are the advanced developments and improved techniques being worked out even now at the Technical Service level. In Part II of "The Army in 1962" appearing next month, the Chiefs of the Technical Services will describe significant innovations in Ordnance, Engineer, Medical, Quartermaster, Transportation, Signal and Chemical Corps doctrine, technique, and materiel which may be expected to reinforce and support the flexible combat power of the Army of 1962.

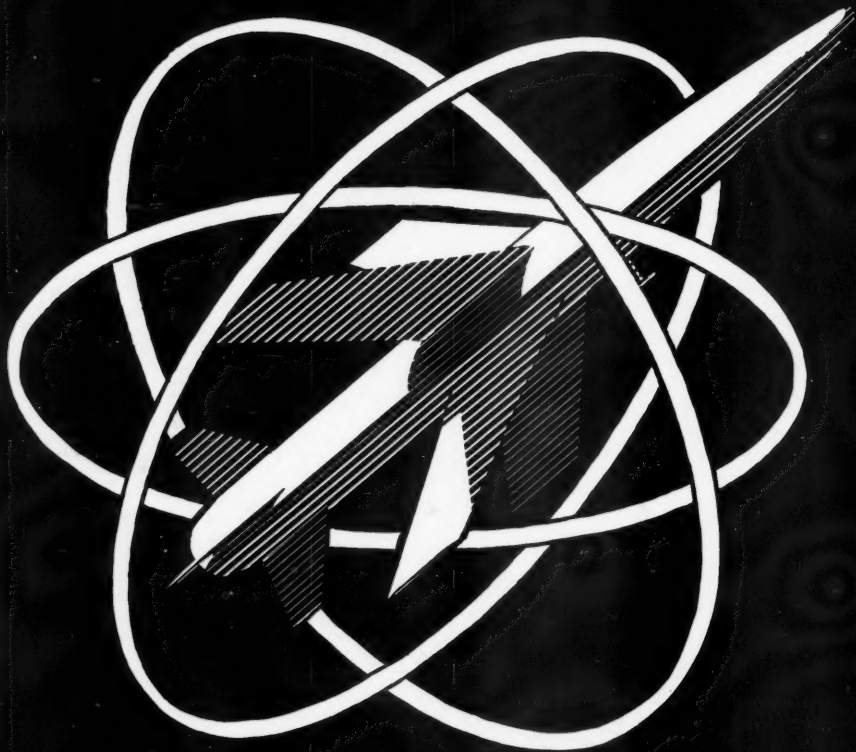


EMBLEMATIC of the revolutionary new fields of missiles and atomics,
Lacrosse—the Army's highly accurate
surface-to-surface artillery guided missile—

is depicted on the back cover

in combination with the atomic symbol.

The Lacrosse is now in production
by the Martin Company at Orlando, Florida.



THE U. S. ARMY—A KEY TO PEACE